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PAPERS OF THE AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS.

A SILVER "MIRROR-CASE," INLAID WITH GOLD, IN THE NATIONAL MUSEUM OF ATHENS.

[PLATE XVII.]

In the collection of the Archæological Society of Athens is an object which, owing to its peculiar character and to the beauty of its execution, deserves special attention. It is called a mirror-case, and it came to the society from the former collection of the Ministry. The place where it was found is not known, but Mr. Tzountas tells me that he believes it to have come from Kephissia.

That it is a mirror-case or the back of a mirror is, I think, by no means certain, for, owing to its dilapidated condition, a positive determination of the use for which it was intended is impossible. It has been suggested that it formed the cover of a vase; this is, however, unlikely, for there is a top and a bottom to the design, which, were the object meant for some such purpose as the cover of a vase, would be so laid out that it could be looked at equally well from any point. However, it is the object itself and not its use that I wish to consider.

The mirror-case—for we may as well call it by this name—is made of silver inlaid with gold on parts of which details are roughly engraved. This technique resembles that of some of the famous swords found at Mycenæ.[1] It was not uncommon in

[1] *Bulletin de Correspondance Hellénique*, vol. x. p. 342 ff.

Greek art, and we see a good example of it in the bronze statuette of a priestess[2] in the British Museum, which has a mæander pattern of silver inlaid along the edge of the chiton.[3] The mirror-case is circular and about 12.5 cm. in diameter. It is not of one piece of metal, but of two—an outer plain rim of silver, about 1 cm. broad, being fastened around, framing the inlaid portion. In section it is not flat. The outer rim is convex, while the inner part is composed of a flat band, encircling a wider convex band, and a small sunk circle forms the centre.

It is the inlaid portion that attracts our attention. Notwithstanding the much shattered condition of the object, one sees at the first glance that the inlaid design is of a double character, the broad convex band being occupied by purely geometric patterns, while the flat band encircling it is filled with scenes of human figures, all of them in lively motion. The geometric design is composed of nine circles, one of which is slightly larger than the others. Each circle contains a different pattern, while all the interstices are occupied by palmettes and rosettes. The border of all the circles is formed by the common wave pattern. It might on first thought seem strange that an artist who exhibits such variety in the pattern of the circles should have been satisfied to use only one form of border. This was apparently due to two facts: one, the few patterns the Greek artist had which were suited, on this very minute scale, to following a circle; the other (and this is the essential reason), that the edges of these circles coincide so that the borders of contiguous circles blend into one and the same, which would have been impossible had the borders been of dissimilar patterns. A third motive may be suggested, which cannot be proved, but of which I feel sure all who have studied Greek art will admit the force, namely, that if each circle had a separate border the design, as a whole, would be so broken up as to lack harmony, while now, owing to this mutual bond, it is gathered together into unity. The artist himself, however, apparently felt the need of giving

[2] MITCHELL, *History of Ancient Sculpture*, p. 280.

[3] To judge by the description of the gifts received by Agamemnon from Cinyras, king of Cyprus, this technique was known in Homer's day (see *Iliad*, XI. 19 ff.; *Od.*, VI. 232). More complicated technique of the same sort is hinted at in *Iliad*, XVIII. 483 ff.; *Od.*, XI., 609 ff.

life in some way to these long stretches of border, and to secure this he continually, but regularly, reversed the direction of the waves. For instance, the border of each circle runs in the opposite direction to the borders of the adjoining circles.[4] Then, too, the waves of the two borders that divide the bands are reversed in the same way, the waves of the outermost border being turned towards the centre, thus drawing the design together and preventing any seeming tendency to spread beyond the edge.

When one comes to consider the patterns within the circles with which the convex band is inlaid, one finds that (with the exception of the larger one) they are composed of elements common enough in themselves, such as long-pointed hearts, palmettes, mæanders, rosettes, *etc.*, but that the combination of them is, if not unique, at least extremely unusual, and suggestive of the style rather of Japanese than of common Greek art. If, however, the character of these patterns is not characteristically Greek, the arrangement of them affords an example of one of the most typical qualities of Greek art—namely, its balance. Take, for instance, the two patterns at the top. Let me state, however, that I have no proof that they were meant to be at the top, for this part of the mirror-case is broken off from the outer rim —but whether at top or bottom does not affect my point. These two patterns consist respectively of diamonds and squares; the next two on the right of stars; the two on the left are less rigid than the others, and may perhaps be best described as being combinations of small figures not adapted to continuous repetition, such as are called by the Germans *Füllornamente*. Only the two at the bottom are now left, and I hope I shall not be thought to go too far when I say that these also are of the same character. At first sight, one design being based on a mæander, the other on a circle, these last two patterns seem to break the rule which I have tried to show holds good for all the rest. But on close examination one sees that the mæander runs in circles, surrounding little circular rosettes, and I think it is this general curving of the design which balances the marked circles of the adjoining pattern, and accounts for the fact that these two apparently dissimilar patterns do not clash one with the other.

[4] Owing to a mistake this does not appear in my drawing.

We now come to the consideration of the flat band which, as I have said above, is occupied by designs composed of human figures. This band is divided into halves of which the upper represents twelve of the Labors of Heracles, while the lower is filled by a Bacchanalian scene. The main distinction of the halves is that, while the scenes on the upper are separated one from the other by straight lines at approximately equal distances, the lower half comprises only one scene divided irregularly by scrolls.

The series of Heracles-scenes begins with the killing of the Nemean lion. Heracles leans forward to the right, grasping the head of the lion in his arms, in the same way as we see him on a metope of the Theseum,[5] on coins of Heraclea[6] and Paeonia,[7] and on the Alexandrian coins of Antoninus Pius.[8] It would be easy to cite many other instances of the representation of this incident; I wish, however, not to make a catalogue of scenes showing the Labors of Heracles, but simply to illustrate the character of the work under consideration. My analogies also are taken from works of different dates, but we must bear in mind that such types as these are very persistent, recurring century after century.

The second scene is open to a double interpretation. It may be Heracles and Hippolyte. On one of the later metopes from Selinus, Heracles is shown seizing an amazon by the hair in the same way, though in other respects the metope has little similarity to the scene under consideration.[9] One of the Theseum metopes,[10] however, shows the scene in almost the same way as the mirror-case. The second interpretation of which our design is capable is that of Heracles and a Giantess, as on certain Alexandrian coins.[11] This latter is, I believe, the true interpretation, and Hippolyte follows later in the series.

In the third scene on the mirror the opponent of Heracles is

[5] Stuart and Revett, III, chap. I. pl. XI. 1; *Monumenti dell' Instituto*, X. 58. 1.
[6] Gardner, *Types of Greek Coins*, V. 6. 32.
[7] *Coins of the Ancients* (*British Museum*), 21. 6.
[8] *British Museum, Catalogue of Alexandrian Coins*, pl. VI. 1044.
[9] Benndorf, *Die Metopen von Selinunt*. pl. VII.
[10] *Mon. dell' Inst.*, X. 59. 2.
[11] *Brit. Mus. Cat. of Alex. Coins*, pl. VI. 1053.

so much destroyed that I do not think anything positive can be said of it; but I believe the scene shows Heracles throwing the Erymanthian boar down on Eurystheus, who is in a large jar, as on coins of Alexandria[12] and also of Perinthus.[13]

Next follows the contest between Heracles and the Ceryneian Stag. The figures are in the same position as on one of the Theseum metopes,[14] so far as we can judge from the battered remains of it, and as in a bronze group at Palermo.[15] This type occurs also in the same series of Alexandrian coins.[16]

The next scene shows Heracles, standing upright, drawing his bow. Although the Stymphalian Birds are not represented, owing, of course, to the smallness of the design, they are without doubt what is aimed at. We see Heracles in the same position on a black-figured vase[17] (armed, it is true, with a sling and not with a bow), and on an Alexandrian coin,[18] where the figure is almost exactly the same as on the mirror.

Following the Stymphalian Birds comes a scene where Heracles is shown managing a running horse, underneath whose feet lies a human body. This is much like the Theseum metope showing the horse of Diomedes,[19] though in this latter no dead figure is shown. This group may perhaps be intended for Heracles and Hippolyte—a similar representation of the scene being given on certain coins of Antoninus Pius.[20]

Next comes the Augean Stables. A striking analogy to this scene is to be found in one of the metopes of the temple of Zeus at Olympia, in which Heracles is shown in the same striding position, with the fork raised over his shoulders.[21] Besides the fork, he is here also provided with a basket, as on another coin of Antoninus.[22]

[12] See Nos. 2567 and 2540 in the *Government Collection, Athens.*
[13] *Königliche Museen zu Berlin, Beschreibung der Antiken Münzen*, I. pl. V. 54.
[14] STUART and REVETT, III, XI. 3. chap. I, pl.; *Mon. dell' Inst.*, X. 58. 3.
[15] CLARAC, *Musée de Sculpture*, pl. 794.
[16] See Nos. 2490, 2694 and 2956 in the *Government Collection, Athens.*
[17] GERHARD, *Auserl. Griechische Vasen.*, pl. 324.
[18] *Brit. Mus. Cat. of Alex. Coins*, pl. VI. 1048.
[19] *Mon. dell' Inst.*, X. 58. 5. STUART and REVETT, III, 11. 5.
[20] SALLET, *Zeitschrift für Numismatik*, 1882, I. 4.
[21] OVERBECK, *Geschichte der Griechischen Plastik*, p. 336.
[22] SALLET, *Zeitschrift für Numismatik*, 1882, p. 4. pl. I. 5.

Now comes Heracles holding the Cretan Bull by horn and muzzle, in the same way as on another Olympian metope[23] and on coins of Selinus.[24] The same scene occurs reversed on the Alexandrian coins.[25]

Following the Cretan Bull is the scene which I believe represents the Horses of Diomedes, though I have found no very close analogies. But the same series of Alexandrian coins which I have frequently referred to offers here another instance of a type which is similar to the one we are considering.[26] On the coin only the heads of the horses show, but there are two of them with Heracles and Diomedes between; the general composition of the two scenes being much the same.

After the scene representing the Horses of Diomedes comes what is without doubt intended to depict Heracles and the Cattle of Geryon. I cannot find any precisely similar treatments of this scene, but on an early black-figured vase we find Heracles represented leading away the cattle, no sign being given of Geryon himself.[27] Also Pausanias,[28] in his description of the Amyclean throne, says *καὶ Ἡρακλῆς τὰς Γηρυόνου βοῦς ἐλαύνει*, making no mention of Geryon, so that here we may see the prototype of our scene. I think it is almost certain the artist, owing to the size and shape of the field of the design, treated the subject in a way corresponding to his treatment of the Cretan Bull.

We come now to the scene with Cerberus. Again I find no exactly similar treatments of the subject—no treatment where, as here, Heracles is dragging forward a single(?)-headed dog; a type not quite the same, but not very unlike, occurs on the Alexandrian coins.[29]

Last of all, we have a scene which can be interpreted in either of two ways. It may be the Hydra, as on coins of Phaestus,[30] or the Apples of the Hesperides. It is uncommon for Heracles to

[23] *Ausgrabungen zu Olympia*, v. 17; *Die Funde von Olympia*, pl. xx.
[24] GARDNER, *op. cit.*, ii. 17.
[25] *Brit. Mus. Cat. Alex. Coins*, pl. vi. 1050.
[26] *Govt. Coll., Athens*, No. 2700.
[27] GERHARD, *op. cit.*, 105–6.
[28] iii. 18. 13.
[29] *Government Collection, Athens*, No. 2542.
[30] GARDNER, *op. cit.*, pl. ix. 7.

be shown getting the apples for himself, but that the type was known is shown us by a black-figured vase.[31] Moreover, it is more likely that the Apples would be at the end of the series than the Hydra. Also, if we turn once more to the Alexandrian coins,[32] we find one that has almost exactly the same design as this on the mirror-case.

If we now regard the scene on the lower half of the band, we find a large part so destroyed that restoration is impossible. The rest, as we see from the ass, the panther, and the figure with a thyrsus, without doubt has to do with some Bacchanalian subject; but whether or not the chief person is Heracles, as is sometimes the case in such scenes,[33] it is impossible to state. It seems to me probable that Heracles is the protagonist.

Having thus considered these scenes, the fact can hardly help striking us, that although we find more or less exact analogies in Greek art for all the Labors of Heracles, as here represented, yet of nine of them the closest analogies are in Egyptian work—the Alexandrian coins. When in connection with this we remember the Eastern feeling exhibited in the geometric patterns, it seems to me not unlikely that this mirror-case was the work of a Greek artist working in Egypt under the influence of both Greek and Eastern art.

If we consider the absolute dissimilarity of the two styles of delineation on the two bands—one being mathematic and the other imaginative—we shall recognize that great skill has been shown in the combination of them, so that they do not clash. The methods adopted are very simple. In the first place, the strictly limited fields of the geometric designs are balanced by the division, with straight lines, of the Labors of Heracles into distinct scenes. It might seem as though the lower half of the rim—the Bacchanalian scene—ought also to be split up in the same way. The reason why it is not so treated is that, as we have seen above, there is a top and bottom to the work, and if the whole of the outer rim were cut by lines as in the upper half, there would be an appearance of rays which would tend to destroy

[31] Benndorf, *Griechische und Sicilianische Vasenbilder*, 42. 1.
[32] *Brit. Mus. Cat. Alex. Coins*, pl. VI. 1052.
[33] Otto Jahn, *Satyrn und Satyrdrama auf Vasen.*

the distinction of top and bottom. However, in order that the two portions should not be too unlike, the maker has divided the lower part at irregular intervals by scrolls; and further, to combine the differing design of the two bands into a harmonious whole, he has introduced into the figure-scenes little scrolls which carry the *pattern motive* into the imaginative series. In themselves they detract from rather than add to the excellence of the scenes, for these are composed with that feeling for filling the field of the design which the Greeks exhibited from the earliest times.

Take, for instance, the second scene—the one showing either Hippolyte or a giantess. Two figures could not be better composed to fill a background of this shape. See how the lion-skin falls into the space left by the bending of Heracles' body; how his club fills the upper corner; how the thigh of the figure on the ground fills the space between the outspread legs of Heracles—and the chief beauty of it all lies in the fact of its naturalness. Take the scene with the Stymphalian Birds, and note how perfectly the spread legs, the leaning body, and the stretched bow fill the space. Look at the scene with Cerberus. Again, the figure of Heracles tugging at the dog, his feet apart, and lion-skin flying, fills the field of the design with a naturalness that makes it look the simplest of tasks to draw such a scene, instead of one of the greatest difficulty. So it is with all these metope-like scenes. Another point of excellence, and one that is essentially Greek, is the balance of one scene by another. It is like what is to be observed in the metopes of the Parthenon, and it is carried out no more pedantically on the mirror-case than on the temple. Take the two scenes at top and see how the action is on lines that go in opposite directions, so that they lock into one another, as it were. The following two do not, to my eye, exhibit this balance, but the two after them do. Then comes another partial break, and finally the last two on each side balance. This same balance is apparent, though less plainly, in the Bacchanalian scene, but I feel sure that, were this part in as good preservation as the other, it would be as obvious.

To sum up: we see in this work qualities that are Greek, others that are Eastern; we find the closest analogies to several of the scenes on Egyptian coins of the second century of our era,

and we find that these analogies have prototypes many centuries older in Hellas. We may note, further, that the coins are not so fine in workmanship as the mirror. Taking all this into consideration, we may infer with some confidence that the so-called mirror-case was, as I have already suggested, made by an artist working in Egypt under strong Hellenic influence a century or so before the birth of Christ; but, until we have more works of the same technique to compare with it, we have not the means to fix the date with exactness.

We have now considered what I believe are the most important features of this work, and it seems to me that the conclusion to be formed from them is, that its main value consists not in showing anything new to the mythologist or to the student of technique, but in exhibiting in a very strong light some of the essential and permanent qualities of Greek art — composition, balance, grace, and finally the fact that the Greek artist cared not to be startlingly original, but was willing to recognize that his function as an artist was to endeavor to add his little to the development of what had preceded him, and not to try to invent something entirely new.

It is a pleasure to work on a beautiful object, even if the result of one's work be of no great importance, and the pleasure is enhanced by friendly sympathy. In the study of this little mirror-case I have owed more than mere help to Mr. E. A. Gardner, the director, and to Mr. A. G. Bather, a member, of the British School at Athens.

RICHARD NORTON.

Athens, January, 1894.

PAPERS OF THE AMERICAN SCHOOL OF CLASSICAL STUDIES AT ATHENS.

ON THE POSSIBILITY OF ASSIGNING A DATE TO THE SANTORINI VASES.

INTRODUCTION.—The vases from Santorini have been long known as among the earliest types of Greek pottery, and have always held a position of considerable importance in the history of Greek ceramics. Aside from any question of style or provenance, their importance is partly due to the general belief among archæologists, that it is possible, on geological grounds, to fix, at least approximately, the date of their manufacture. It has been suggested to me, as a geologist who has spent considerable time during the last few years in Greece in connection with the American School of Classical Studies, that it would be worth while to review the whole subject from a geological point of view, with the aim of determining what our geological knowledge may be in regard to the vases in question, and whether, or not, belief in the possibility of assigning a definite date, on geological grounds, is warranted by the facts of the case. Such a review seems the more important from the fact that this belief has assumed wide-spread proportions, the approximate date of 2000 B. C. being given (even in some elementary manuals) with all the appearance of being based on certainty.

Accordingly, the subject will be treated from a purely geological standpoint, such definitions and explanations being given as may seem necessary to render the discussion clear to the non-geological reader. I propose to begin with a brief geological description of the islands and of the volcanic phenomena involved in the question; next, to examine the circumstances in which the vases were found; and, finally, to discuss the question in the light of the facts so noted.

GEOLOGICAL DESCRIPTION.—By Santorini is understood a group of islands, the southernmost of the Cyclades, situated in lon. 25° 20′ E. of Greenwich, and lat. 36° 24′ N. On the map it is seen that the group is roughly elliptical in shape, with a major axis running generally north and south, of about 18 km., and a minor axis of about 16 km. The group is composed of a ring of three islands, with three channels separating them (the northern one being the deepest), enclosing an oval, land-locked bay, with three small islands in the centre. All around the group (on the outside), at a general distance of from three to five km., the water gradually increases to the depth of 100 fathoms and over. The circuit of this deep-water line is approximately of the same shape as that of the outer shore line of the group. Inside the large island ring, on the contrary, the gradient is much steeper, the hundred-fathom line running close to the shore. The water inside is of considerable depth all over the bay, and reaches its maximum of 213 fathoms (390 metres) at a point north of and not far from the small islands.

The largest island of the group is Thera, on the east side of the ring—a crescent-shaped island, enclosing the bay in the hollow of its western side, and bounding it partly also on the north and south. This island is of typically volcanic structure. In the first place, the inner concave side is extremely high and steep, rising almost perpendicular from the water's edge to heights varying from 60 to 360 metres, the average being about 200 m. From this high inner rim the land surface falls away quite regularly to north, east, and south, till it reaches sea level. In the second place, the structure of the inner cliffs, a striking feature which draws the attention at once on entering the bay, bears witness to the volcanic origin of the group. These cliffs show very many broad or narrow bands of black, red, yellow, and white rock, which, in general, run in a horizontal direction along its face. These bands, which are the ends of strata sloping down and out from the face of the cliff, parallel to the surface of the land above, are seen to be compact black lava, reddish *scoriae* (volcanic cinders), and light-colored tufa, which is a rather soft and crumbly rock, composed of the fine dust and ashes blown out of a volcano and cemented by the action of water and the atmosphere.

Such form, such structure, and such materials, prove conclusively that we have to do with a volcano. The only exception to this structure is the mass of Great St. Elias and Mesa Vouno, in the southeastern part of the island, which are composed of marble and schist, non-volcanic rocks, and which represent the original island, as it existed before the formation of the volcano, at the site of its activity.

The island of Therasia, the one on the northwest of the ring, though smaller than Thera, is of the same structure and composition: a high, almost perpendicular cliff inside, showing alternate beds of lava and tufa, with the surface sloping gradually down to the sea outside. The still smaller Aspronisi, in the gap between the southern point of Therasia and Cape Acrotiri on Thera, is also of the same character.

The smaller islands in the centre are three in number, excluding two rocky islets only a few yards square. As they are all due to historically known eruptions, and have very little connection with the subject under discussion, the description of them will be very brief. The oldest (that to the southwest) is Palaia Kaimeni, a narrow, rugged mass of black lava, 100 metres high, formed by an eruption in 197 B. C., and slightly enlarged in subsequent centuries. To the northeast is Mikra Kaimeni (71 metres high), formed by an eruption in 1573, a small but good example of a volcanic cone, with crater. Between these lies the largest of the three, the island of Nea (or Giorgio) Kaimeni, which owes its existence to two distinct eruptions, the first of which, in 1707, formed the cone of Nea Kaimeni (101 metres high), on the north. About the first of February, 1866, began a second submarine eruption, a short distance to the south of this, lasting till August, 1870, by which was created the cone of Giorgio Kaimeni (127 m. high), which finally was joined to Nea Kaimeni, forming, of the two, one island. This cone, when I saw it in the spring of 1893, was still giving out hot steam and sulphur vapors. This eruption aroused great interest in the geological world, and was studied with great zeal and care by many scientists, chief among whom was M. Fouqué, whose voluminous work[1] is the standard one on the whole group.

[1] *Santorin et ses Éruptions*, Paris, 1879.

VULCANOLOGICAL PRINCIPLES INVOLVED.—Having thus briefly sketched the structure and present condition of Santorini, we may rapidly review some of the chief vulcanological facts and principles which have a bearing on the geological history of the island. At the outset, a volcano may be defined as a generally more or less conical mountain of peculiar structure, situated at a point on the earth's surface where connection exists (or has existed) between the very hot and either actually or potentially liquid interior of the earth and its surface. As to the causes of volcanic action, little is known, and it is needless to enter into a discussion of them here. When, however, the channel of communication between the surface and the interior is open, there results, under proper conditions, the ejection of various materials: steam and gases of various kinds, hot water and mud, and, by far the most important, stony matter which goes to form the cone of the volcano. This last comes to the surface sometimes in the form of lava (molten rock), which is more or less liquid at first, but gradually cools, forming beds and masses of solid rock. Again, masses of rock already solid (such as the so-called "volcanic bombs") may be ejected; or, again, the solid or liquid forms of the rock may be so disintegrated from various causes that they reach the surface in the form of *scoriæ* or cinders, *lapilli* (smaller fragments), or the still finer volcanic ashes, sand, and dust. The ejection of these materials may be, as will be seen later, either quiet—a simple welling out of liquid lava—or may be of various degrees of intensity, at times assuming the phase of explosions of almost unimaginable violence.

The typical volcanic cones formed by the accumulation of these materials may be divided into three main classes, according to the nature of the *ejectamenta* of which they are composed. There may be lava cones, made by successive streams of lava pouring out on the surface, such as are met with in the Sandwich Islands. Or, again, the cone may be made up chiefly of the finer fragmental materials, *scoriæ*, *lapilli*, and ashes (so-called "cinder cones"), as at Monte Nuovo, near Naples. But the great majority of volcanoes are cones of a mixed type, composed of superposed sheets of solid lava, cinders, and tufa, which structure is generally further complicated by the presence of "dykes," *i. e.*, vertical sheets of rock

resulting from the filling up by melted material of cracks formed in the cone by the eruptive forces. Such a structure has been seen to exist in the outer ring of Santorini. Here have already been noted the superposed beds of lava and tufa, and on closer examination numerous vertical dykes are clearly seen cutting the beds exposed along the inner cliffs.

I shall now examine this last type of volcano and see more in detail what the structure of such a cone is. The more or less disintegrated material is blown out of the rent to a certain height and falls at a greater or less distance, resulting in the following structure. Starting from the orifice, the beds of cinders, etc., slope upwards and outwards on all sides, forming a funnel-shaped hollow—the crater; then, after attaining a maximum height, they slope downwards and outwards on all sides. The lava sheets are partly those that have flowed over the growing edges of the crater, and partly those that have been extruded from the flanks of the cone; in both cases following the slope of the cinder-layers beneath.

Now, in the outer ring of Santorini it is seen that all the beds slope down and *out;* there are none left that slope down and *in.* In other words, all the central, funnel-like part of the volcano has disappeared, and has given place to an enormous elliptical gulf or pit, measuring 11 by 7.5 km., and with a total depth, from the highest point of Thera to the greatest sea depth, of 750 m.; which means that in all more than 60 cubic kilometres of rock have disappeared. The dispersal of all this part of the original cone is explained, from many analogous cases in the history of volcanoes, chiefly by a tremendous explosion which blew off all the upper and central part of the cone.

As an instance, the familiar case of Vesuvius may be cited. Prior to 79 A. D., the cone of Vesuvius did not exist, but the encircling ring of Monte Somma was complete. Though it was suspected by some,[2] from the appearance of the rocks, that the mountain was of fiery origin, yet almost all tradition of an eruption had been lost. Suddenly, in 79 A. D., after a few preliminary earthquakes, a violent eruption began of showers of stones, ashes, and mud, and especially marked by a tremendous explosion, which destroyed all the southern half of the mountain, leaving Monte

[2] DIOD. SIC., IV. 21, 5; STRABO, V. p. 247.

Somma much as we see it to-day, the cone of Vesuvius being due to later successive eruptions of a more quiet character. A still more striking example is furnished by the volcano of Tomboro, on the island of Sumbawa, east of Java. In April, 1815, there took place an eruption lasting only six days, but which made up for its brief duration by its violence. This eruption is well known for the great explosion, or explosions, attending it, the greatest, indeed, on record, by which the mountain lost 1600 metres of its height, and a mass of *débris* estimated at 1400 cubic kilometres, was dissipated into the air, the island of Borneo, at a distance of 140 km., being covered with ashes. The tremendous outburst of Krakatoa, between Sumatra and Java, may also be recalled. After such well authenticated cases as these, which are only a few out of many, such an explosion as was necessary to produce the gulf at Santorini seems quite moderate. The structure and mode of formation of Santorini are, in fact, typical of a large number of volcanoes, and such a detailed description has been given in order that the non-geological reader, who is naturally unacquainted with all the facts, may see what data we possess for forming a quite clear idea of the geological history of the group.

This, in brief, is as follows. There first existed at the site of the present group a small island (St. Elias and Mesa Vouno) of metamorphic marble and schist. Near (and partially covering) this was formed, in the course of ages, a large volcano of mixed type, rising out of the surrounding sea and gradually growing by successive eruptions of lava and cinders, till finally an unusually violent paroxysmal eruption took place, chiefly characterized by an explosion which blew into the air all the upper part of the mountain, cracking the sides and thus giving rise to the three entrances into the bay. The scattered material was, of course, mostly lost in the surrounding sea, but some was deposited on the remaining slopes, where it can now be traced. This explosion was also, as suggested by Fouqué, perhaps accompanied by a sinking of the central part, resulting in an increased depth of the bay. At a subsequent period eruptive activity was resumed, though with greatly diminished power, giving rise to the small Kaimeni Islands in the centre of the bay; and at the present time the volcano may be said to be dormant.

THE VASE FINDS.—Having thus obtained an idea of the structure and mode of formation of the group, we may pass on to the circumstances under which the vases were found. Here I have used as my authority the third chapter of Fouqué's *Santorin*.

The tufa (or so-called *pozzuolana*), of which Thera and Therasia are partly formed, is known to be an excellent material for use in concrete or cement for submarine works, and for some years prior to the last eruption large quantities of it had been extracted and exported by the Suez Canal Co. for their own use. The process of extraction is very simple, as may be seen to-day, for it is still exported from the islands. Spots on the steep inner cliffs are selected where the tufa is of the requisite quality and in sufficiently thick beds, and this, being very soft and incoherent, is broken off with picks and crowbars and allowed to slide to the water's edge, where it is shovelled into the vessels waiting for it. The material was, at the time spoken of, chiefly obtained from the east and south cliffs of Therasia, and from near Acrotiri on Thera. In the course of these excavations rough walls were met with in the tufa, which, being common in the islands, passed without notice, till in 1866 Professor Christomanos of Athens heard of them, and, in conjunction with others, made regular excavations for them near the south end of Therasia. Other excavations were made shortly after by Fouqué as well as by MM. Gorceix and Mamet, in the neighborhood of the present village of Acrotiri on Thera.

These excavations resulted in the uncovering of walls built of rough (or in some cases hewn) blocks of pumice and hard tufa, cemented in places by a reddish mud of volcanic cinders, sticks of wood being also inserted here and there among the blocks.[3] The plans of the buildings of which these walls formed part are in some instances quite complete, door and window openings were to be seen, and in one instance the base of a column in the centre of a square room.[4] Among these walls were found numerous household utensils of the inhabitants, including a bronze saw,

[3] It may be of interest to record that when I visited Therasia, in the spring of 1893, and inquired for these walls, I was informed by the Demarch and others that they had all disappeared—either destroyed with the tufa cliff or carried off for use in modern buildings.

[4] For plans and details *cf.* FOUQUÉ, *Santorin*, cap. III. p. 94, sqq.

mortars and pestles, and mills made of lava for grinding grain, as well as numerous vases and vase fragments, some of the vases still containing carbonized barley and other seeds. Most of the vases were found inside the wall enclosures, but others were found back of and outside of them.[5]

The walls rested either on lava, as at Acrotiri, or on a bed of tufa, as at Therasia, and were covered with tufa, in some cases to a depth of 30 metres. Traces of the old soil were found near and below the walls, and in a few cases a similar layer was also encountered at some height above them, between the tufa beds. The walls were in almost all cases standing upright, some reaching a height of two metres, or even more.[6] All the space inside and outside them was filled with tufa, which covered and enclosed the vases and other remains.

The theory that these constructions were for sepulchral purposes was quickly disproved by their plans and by the objects found, as well as not found, in them. These show that they were in reality dwellings.

It has also been suggested that these buildings did not lie on the surface of the original soil, but were cave-like dwellings hewn out of the cliff, such as are at present in use in Santorini; this theory being chiefly supported by the presence of a layer of ancient soil above some of them. This view is shown to be false by the following facts.

Some of the walls were covered with beds of tufa so thin and

[5] Fouqué's book being large, expensive, and rarely found in archæological libraries, it may be of use to quote his own *résumé* of the principal facts in regard to the life of the primitive inhabitants, as revealed to us by these excavations (*cf. op. cit.* p. XVI): "These men were laborers or fishermen. They raised flocks of goats and sheep, cultivated the cereals, made flour, extracted oil from olives, wove cloth, fished with nets. Their dwellings were supplied with wooden timbers, and the walls were of squared stone. They made on the wheel vases oddly decorated and of characteristic forms. Most of their utensils were of stone, most commonly of lava, and others of flaked flint or obsidian. They were acquainted with gold and probably copper, though these metals were extremely rare among them. Wood abounded in the island, while now only a single tree (a palm) exists in the whole group. The culture of the vine, which is at present practised to the exclusion of all other agricultural labor, seems to have been unknown at this period."

It may be that the ancient name for this island, Καλλίστη (HEROD., IV. 147), or a tradition of it, dates from this epoch.

[6] Fouqué gives very little information on this point.

incoherent that the excavation of caves beneath them would have been impossible. The natural situation of the buildings, and the presence of window and door openings in the rear and side walls, disprove this view. Further, M. Gorceix discovered traces of a roof of tiles and earth laid on beams, and it may be added that the finding of pottery outside the house walls is against such a theory.

The layer of ancient earth in the tufa above the walls is easily explained as being the remains of soil formed on the material which buried the buildings and which was itself subsequently buried.

Having thus seen that the tomb and cave-dwelling theories are alike untenable, the only alternative and the simplest explanation is that these were houses built on the slopes of the original volcanic cone, and subsequently buried by the ejections during an eruption; the inhabitants abandoning, in alarm, their houses and such of their utensils as they did not, in their haste, carry away with them. This eruption must have been sudden, and, as Fouqué observes, judging from the upright condition of the walls, accompanied by few or feeble earthquakes—a rather remarkable fact, as the presence of wooden beams in the walls (a precaution still in use in many places against earthquakes) indicates their frequency at the time the houses were built. After the primitive villages were thus destroyed, other eruptions followed, covering them still deeper. This went on for an unknown period, till, one day, a violent explosion took place, the pent-up forces becoming suddenly too great to be withstood by the mountain mass above; and, since there was no other outlet, the result was the disappearance of a large part of the cone and the formation of the deep central bay. That this catastrophe took place *after* the ejection of the tufa beds covering the walls, is shown by the fact that these beds are cut sharply off along the inner cliff down to the sea level, exactly like the lava and tufa beds lying beneath the walls.

DISCUSSION.—Since, then, the pottery antedates the great catastrophe, it is evident that if we can establish a date for the latter we shall have a limit on this side for the date of the former. Realizing the importance of this, and seeing that the geological phenomena involved were so striking and definite, archæologists turned to the geologists for aid in solving the problem of the date

of the vases. Whether they were justified in this confidence—that is, whether geology, in our present state of knowledge at least, is capable of solving this special problem—it is the object of this paper to examine. M. Fouqué, who was not only the most eager investigator of Santorini, and the greatest authority on it, but who had also conducted excavations himself for the vases, was naturally the one most competent to deal with the question, and his opinion was most regarded and most authoritative. He accepted the task and gave an answer to the question, though expressing himself "with great reserve," and ending with the remark: *Ce qui seul est absolument certain, c'est que Santorin a été habité avant l'effondrement qui a produit la baie.*[7] As one may judge from these two remarks, his opinion of the arguments advanced by himself was probably not very high, and he evidently only brought them forward and published them as the best that one thoroughly conversant with the subject could bring.

This being the case, it is doubly unfortunate that his reserve has been forgotten by those who quote him, and that his provisional and hypothetical date has been given by non-geological writers with an assurance and a certainty which he himself would be the first to deprecate. It must, then, be remarked that what follows is by no means intended as polemical against M. Fouqué, whose weight as an authority on Santorini the writer would be among the last to dispute; but it is put forward as an impartial examination of the arguments advanced by him, and results, as the writer hopes he may succeed in showing, in their refutation. It is the writer's aim to make clear to the archæologist the real value of M. Fouqué's statements as geological arguments, and to put the question again on a safe and secure basis, though this involves leaving it as it was in the beginning—unanswered.

The arguments on which M. Fouqué rests his claim for a date of about 2000 B. C., and which are presumably the best, if not the only ones,[8] are two in number, and are to be found on page 130 of *Santorin*. After stating that the formation of the large island

[7] *Op. cit.*, p. 131. It may be remarked also that, in his *résumé* of our knowledge of the inhabitants and their pottery (p. XVI), he makes no mention of the date of the latter.

[8] Though giving the subject considerable thought, I have not been able to invent any others, nor have I met with others advanced elsewhere.

scarcely began before the end of the pleistocene tertiary (Glacial Period), the duration of its growth being not less than the whole of the quaternary (present geological period), which has already lasted certainly very many thousands of years, he formulates the first argument, which is here given in a slightly condensed translation: "Observations on the islands in the centre of the bay show that after the great catastrophe there was *certainly*[9] a long period of quiet. Then in 196 B. C. took place a new eruption, which produced Palaia Kaimeni, although this was added to somewhat by eruptions in the first centuries after Christ. A second period of relative calm filled all the Middle Ages, and it was not till after the fifteenth century that the eruptions resumed their frequency and energy, and formed new islets. The second period of calm having had a duration of about ten centuries, one can, without rashness, allow to the first a minimum duration of double this, especially when one compares the intensities of the volcanic phenomena, so diverse as they are, which they followed. On this line of reasoning the formation of the bay would go back to about two thousand years B. C."

The argument above is based on at least two assumptions which are not in accordance with facts. The first assumption is that the length of the period of repose following a volcanic eruption is proportional to the intensity of the eruption preceding it. Now, while it is generally true that "a long-continued or violent eruption is usually followed by a prolonged period of repose,"[10] yet the exceptions to the rule are many, and no fixed principle of the sort has ever been recognized, or even enunciated, by any of the great writers on volcanoes, such as von Buch, Scrope, Daubigny, Fuchs, Schmidt, or Dana. Lack of space does not allow the citation of many examples, but the following may be given to show the want of correspondence between the intensity of an eruption and the duration of the succeeding period of calm.

The best known case is that of Vesuvius. Starting from the most violent eruption of all, that of 79 A. D., we find the next great one recorded in 472, when the ashes were said to have reached Constantinople. During the next seven hundred years we find seven eruptions recorded, the last in 1139, when dust and

[9] The italics are mine.—H. S. W.

[10] JUDD, *Volcanoes*, p. 33.

stones were ejected for thirty days. This comparatively very feeble eruption was followed by a period of almost absolute repose lasting nearly five hundred years. At the end of this time the volcano seemed quite extinct; so much so that the plain at the bottom of the crater was used as a pasture-ground for cattle. In 1631 took place the most violent eruption known since that of 79, when seven streams of lava poured down the mountain side, one of them flowing over the buried ruins of Herculaneum. Since then the volcano has been in a constant state of intermittent activity, very violent outbreaks occurring in 1737, 1779, 1793 (which lasted about eighteen months), 1822 (when six hundred feet of the cone were blown away), and 1872. Here we find the most violent eruption of all followed by only four hundred years of repose, while a comparatively feeble eruption (1139) was followed by nearly five hundred years; and the second most violent outburst of 1631 was succeeded by a period of gradually lessening activity lasting 106 years, broken by the great eruption of 1737, which in turn was followed by a period of many and irregular eruptions. A similar tale is told by Etna, and other volcanoes furnish as striking examples, which are quite enough to disprove the first assumption.

The second assumption seems to be that the intensity of the first eruption (that of the great catastrophe) was about twice as great as that which produced Palaia Kaimeni, that is, if the periods of repose are directly proportional to the intensities of eruption, which must be assumed as approximately true (if any such assumption is made), since the construction of mathematical formulæ for the relation between periods of eruption and repose is, from the nature of the case, impossible. A glance at the map of Santorini will be quite sufficient to show that the first eruption was much more than twice as violent as the second. It will be remembered that by the first explosive eruption a mass of material amounting to over 60 cubic kilometres was blown into the air, while by the second was produced only a small island, which, even granting that it has lost considerable from its bulk by denudation, could not have been one-tenth the size of the former mass, and was undoubtedly much less. The mass of material moved is here used as a measure of the intensity of the eruption, but the

manner in which the force was manifested points the same way. So, on this basis, it being taken for granted that the first assumption is true, we should allow much more than twice as great a duration to the first calm period as to the second, and hence place the great catastrophe at a date much further off than 2000 B. C.

But there are two more fundamental and more fatal points of weakness in this argument. The first is that Fouqué seems to assume that volcanoes act in a more or less regular manner; in other words, that there is a sort of periodicity in their eruptions. But, as is well known to all who have studied the subject, this is by no means the case. Volcanoes vary as widely as possible in the violence of their eruptions, in the periods between two successive eruptions, and in many other ways. There are volcanoes, such as Sangay in Ecuador or Stromboli in the Lipari Islands, which have been in a continuous state of activity ever since their discovery, while there are others, as Skaptar Jökul in Iceland and Monte Nuovo near Naples, which have had, or are due to, only one known eruption, and ever since have been to all appearances extinct. Between these two extremes there are all gradations, including Mt. Epomeo in Ischia, which has had only four known eruptions, those of 470, *ca.* 350 and 89 B. C., and 1302 A. D., and Vesuvius or Etna, with their irregular and spasmodic eruptive periods. In fact, in the present state of our knowledge, we can find no law governing the outbursts of volcanoes, though many attempts have been made, and, so far as we now see, they can be called regular only in their irregularity. It is, of course, not implied by this that they are not subject to the physical laws of the universe, but the fact should be made clear that up to the present time, owing to various causes, partly to the great complexity and difficult nature of the phenomena, we have not been able to discover the laws that regulate the action of volcanoes, or to establish any periodicity in their eruptions. Hence all reasoning based on such laws may justly be put down as unsound and unsafe.

It might be added that, though the data are very similar to those in the case of Santorini, no geologist has yet attempted to fix the date of the great pre-Pompeian eruption of Vesuvius, which produced the steep encircling wall of Monte Somma, or of that eruption that produced the Val del Bove at Etna.

But the weakest point in this argument is found in the sentence: *La seconde période de calme ayant eu une durée de dix siècles environ, on peut, sans témérité, attribuer à la première une durée minima double de celle-ci, surtout quand on compare l'intensité si différente des phénomènes volcaniques auxquels ils ont succédé.* Here it is seen that the assigned date, after all, rests on a merely personal estimate, or, to put it perhaps more correctly, a guess. What other grounds exist for placing the first period at double that of the second we are not told, and it is very difficult to see what they are or could be. For the sake of making the argument complete and logical, they should have been given. As it stands, the argument is seen to be founded on a purely personal opinion, and is hence of little or no scientific value.

The second argument is as follows, an exact translation being given, since some of the details are important: "At the north point of Therasia, and on the part of Thera opposite, the pumiceous tufa is covered with a bed of red pebbles, about 15 to 20 metres thick, enclosing marine shells. On the east shore of Thera, near Kolambo, my learned travelling companion, M. de Verneuil, and I, observed the same fact. All these spots have therefore been, since the formation of the pumiceous tufa, for some time beneath the level of the sea, then raised by a probably slow movement of elevation. Now on the part of Therasia thus raised there exist ancient constructions with inscriptions which enabled M. F. Lenormant to fix their date at the fifteenth century before our era. These constructions were built at a time when the elevation was even more marked than it is to-day, since a part of them is at present below the sea level. Now the formation of the marine bed which supports them and its elevation, which are consequently prior to the eighth century B. C., required a duration of time which I do not fear to estimate at at least ten or twelve centuries. One falls back, then, for the age of the pumiceous tufa almost on the date which I have fixed upon above."

This argument, as given here by Fouqué, is rather vague and uncertain. The tufa is presumably that spoken of on page 248, where its age is merely given as prehistoric. As he speaks of apparently the same tufa occurring all over the surface of Thera, even on the top of Megalo Vouno, it is possibly due to the last

eruption of the large volcano, but nothing definite is said of the tufa mentioned in the argument.[11] The impossibility of fixing the date of any inscription at the *fifteenth* century B. C. will be recognized by every epigraphist, and the use of the word *quinzième* is evidently a mistake, as later on he uses *huitième*, and bases his date on this latter figure.

The argument then seems, in brief, to be this: Buildings of probably the eighth century B. C. were found resting on marine beds, above tufa formed prior to the great catastrophe, which have since been raised above sea level. Therefore, estimating the time necessary for the formation and elevation of these beds at twelve hundred years, the date of formation of the tufa was about 2000 B. C.

The weaknesses of this will probably be at once apparent. In the first place, we do not know when the tufa in question was ejected—it may have been thousands of years before the great catastrophe. Then, there is uncertainty in regard to the buildings, not only as to their actual date as shown by the inscriptions, but their date relative to that of the marine beds, as it is impossible to say how many years elapsed between the elevation of the beds and the erection of the buildings. Next, subsidence and elevation may have taken place since their construction, as happened at the temple of Serapis at Pozzuoli; and so it is possible that the so-called marine beds were submerged beneath the water and covered with barnacles since the erection of the buildings. Last of all, and the most fatal weakness, is the estimate of ten to twelve centuries, which tallies so closely with Fouqué's other estimate. It is well known to all geologists that to estimate the time necessary for the deposition of any given bed is almost impossible in the majority of cases, and very uncertain even in the most favorable circumstances. We cannot be sure that the conditions always remained the same, and every

[11] Two discrepancies should be noted. The pebbles which are here called *rouges* are described as *cailloux roulés* on page 248; probably the latter adjective should have been used in the former place. On the same page, he says that at many points along the north shore (of Thera) there are cliffs composed of the *débris* of this pumiceous tufa, and "at the same time there are found these rolled pebbles . . . . and blocks of lava with scopulas and barnacles adhering to their surface." Here there is not mentioned a regular bed such as is spoken of on page 130.

change in the conditions under which a bed is formed necessarily changes the time of its formation. Then, again, elevation and subsidence are phenomena whose regularity we cannot be sure of; they may be either slow or rapid; and in this case no figures are given which enable us to form any idea of the rate of elevation, and, from the nature of the case, it is probable that no figures can be given.[12]

So it is seen that this argument, like the first, depends largely upon a purely personal opinion and estimate, unsupported by either facts or figures, and is hence comparatively valueless. Both these arguments, in fact, show signs of having been written hurriedly, and without having received from their author the thought and attention which were due them.

And now that we have seen the unreliability of both these arguments, which are all that have ever been brought forward in support of a date (on geological grounds) for the vases, it is pertinent to ask the question: Can geology solve this problem? In the present state of our knowledge, and, so far as one can see, for a long time to come, the answer must be No. It must be borne in mind that we are here dealing with a set of phenomena most uncertain and irregular in their action, the direct observation of which is most difficult, if not impossible, and that the science of vulcanology is still in its infancy. One might almost as well ask a meteorologist to tell in what year a given oak tree was blown down, when no meteorological records of the region had been kept, except those of a few storms, since the event. So, however regretfully, geologists must, for the present, withdraw from the attempt to settle the question of a date for the pottery of Santorini. It is possible that the accepted date of 2000 B. C. may be right; geology does not deny it. But my plea is merely against the acceptance of the date as definitely, even though approximately, established on geological grounds, when to give a definite solution of the question is, as we have seen, beyond the powers of a geologist. Such a proceeding does far more harm than good to both sciences; and the establishment of a date for the Santorini vases on such an uncertain and illogical basis would surely, in the end, prove injurious to the science of Greek ceramics.

[12] Fouqué admits this uncertainty when he says that the movement of elevation was *probablement lent.*

PLACE OF MANUFACTURE.—In conclusion, as geology has been shown to be unable to answer one question put to it, it is only fair that an example should be given where it, and it alone, was able to solve an archæological problem, and thus to show that it may be of great value to its sister science. This example is furnished by the same Santorini vases we have just been discussing.

It was a matter of some importance and interest to establish the place of manufacture of the vases; whether they were imported into the group of Santorini, and, if so, whence, or whether they were of native manufacture. There being no clay suitable for their manufacture found at the present day anywhere on the group, it was at first thought that the vases must have been imported. But M. Fouqué had the happy idea of examining fragments of the pottery by the same methods as are employed for the examination of rocks. The process consists in grinding the fragment with emery on iron and glass plates till it becomes thin enough to transmit light, when it can be easily studied under the microscope by the usual petrographical methods.

In all the vase fragments thus studied, he found numerous minute fragments of volcanic rock and minerals, which could be identified with certainty as derived from Santorini itself, and, not only that, but from definite parts of the group; for the Santorini lavas, like those all over the earth, have their own small peculiarities, and can, in many cases, be easily recognized. Besides these mineral fragments, he was able to identify various organic remains—foraminiferae, diatoms, and sponge spiculae, of different genera—some of fresh and others of salt water origin. From such data he drew the following perfectly safe and logical conclusions:

1. That all the pottery was made in Santorini itself.

2. That the clay of which it was made was taken from a bed situated where the sea had access to it, and, further, where fresh-water streams brought to it detritus from all the rocks of the southern part of Thera.

3. That this clay bed is now either destroyed or covered by the sea, but that it was probably situated in a valley between the southern part of the present Thera and the original central cone.

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Venice, Italy, June 18, 1894.

A STUDY IN GREEK ARCHITECTURAL PROPORTIONS.

THE TEMPLES OF SELINOUS.

It is commonly assumed that Greek architectural proportions varied in such a way from century to century that if we had before us the exact proportions of a building we might infer its approximate position in a chronological series. This assumption is a very fascinating one, since it extends the hope of reducing Greek architectural archæology to the basis of a science of mathematical exactness. And yet it is true that very little pains is usually taken to exhibit tables of measurements and proportions, and reliance is placed upon vague general impressions or upon a very scanty basis of measurements. In a subject in which exact methods of observation are only occasionally applied, it is hardly a matter for surprise that so slender a basis of inference as a single proportional aspect should be accepted as a means of determining the chronological sequence. This is precisely what has happened with the historians of Greek architecture. Krell and Durm, and Julius and Reber, are all followers of that fetich of Greek architectural proportions known as Semper's norm.

It may be well at this point to set forth briefly what is meant by Semper's norm. In his remarkable book, *Der Styl*, first published in 1860–1863, Dr. Gottfried Semper outlines the history of Greek architecture. In this he presents a scheme of proportions, which he is careful to state is a mere means of comparison and not a canon. It is the following: "If we take three average distances from column-axis to column-axis as the basis of a rectangle, whose vertical sides are equal to the height of the order, measured from the level of the top step of the stylobate to the upper level of the cornice (excluding the kyma moulding), we thus construct the *normal rectangle*, or in brief, the *norm*, whose measure of length or modulus is the lower radius of the column."[1]

[1] Semper, *Der Styl*, 2d edit., v. II, pp. 392–395.

According to his view, in this norm all the principal relations and measurements of the system are contained. The norm of a temple, therefore, may be expressed as a fraction, thus:—

$$\frac{3 \text{ average axis-widths}}{\text{height of column} + \text{entablature}}$$; or, numerically, the norm of the oldest temple at Selinous is $\frac{16.5}{(9 + 4.55) = 13.5}$.

Applying this norm, he finds six stages in the history of the Doric style, which he characterizes as—

1. Proto-Doric.
2. Lax-archaic Doric (VII cent. B. C.).
3. Strong-archaic Doric (VI cent. B. C.).
4. Developed Doric (V cent. B. C.).
5. Attic Doric (V cent. B. C.).
6. Late Doric or Macedonian (IV cent. B. C.).

These divisions have been substantially followed by his successors.

In criticism of this norm we make two remarks: First, in the fractional form given by Semper the norm is unpractical. It is too difficult to compare fraction with fraction. A whole series of such fractions leaves the mind in a confused condition. Even Semper himself does not attempt to make close comparisons, and his successors are easily led to draw false conclusions. Thus, Semper is satisfied in assigning temples to general classes, without applying his norm so as to establish a serial order of individual temples. Krell (*Ges. d. Dorischen Styls*, 1870), while he expresses more exactly the successive stages of the norm from the horizontal rectangle to a square, and then to a vertical rectangle, nevertheless makes erroneous comparisons of individual norms.

Our second remark concerning Semper's norm is that it is insufficient. It makes no account of ground-plan proportions in general, assuming the inter-axial columnar widths to be the only important variable, and it makes nothing of elevation proportions in general, assuming the total height of the order to be the only important measurement. The distinction between column and entablature in Semper's norm has no functional value and might as well have been omitted. The insufficiency of Semper's norm is practically admitted by the group of writers we have

mentioned. Krell tabulates other proportions, but does not utilize them; Durm follows the same course.

A method analogous to that of Semper is followed by Benndorf in his work *Die Metopen von Selinunt*, 1873. He places the temples of Selinous in a series of chronological classes. One of his criteria involves proportions, not taken, however, from the elevation, but exclusively from the ground-plan. According to this norm, narrow temple cellas are early, wide cellas are late. To this we reply, as to Semper: a single proportional aspect is a slender basis of inference. Special causes may have operated to produce a wide cella in early times, or a narrow one in late, without materially affecting the general proportions of the period.

It is important, therefore, for us to inquire whether a single proportional aspect may not be accepted as of some, however slight, value as a norm, and whether the addition of many proportional aspects may not furnish us a norm of much greater value.

In order to limit our attention to a series of monuments, of which careful measurements have been taken, I have selected for comparison the five hexastyle Doric temples at Selinous, designated by Hittorff, in his *Architecture Antique de la Sicile*, Paris, 1870, as temples C, D, S, R, and A. Should the inquiry prove fruitful in the case of these temples, which are of the same general style and found in the same locality, similar modes of comparison might be established for temples of other styles or of the same style as modified by other local peculiarities. In the following tables I have presented first the measurements in metres. These have been compiled from the plates and text of Hittorff. In a few cases, to which I have attached a question mark, the measurements are hypothetical; in other cases they seem to be the result of careful observation.

GROUND-PLAN MEASUREMENT.

	C.	D.	S.	R.	A.
Stylobate breadth,	24.025	23.718	24.402	25.298	16.445
" length,	63.862	55.183	61.754	67.829	40.790
" surface,	1534.285	1308.830	1506.920	1715.938	670.792
Cella breadth (ext.),	10.503	9.538	9.282	14.262	9.023
" length,	40.683	38.277	40.687 (?)	50.000 (?)	29.504 (?)
" surface,	427.293	365.086	377.657 (?)	713.100 (?)	266.451 (?)
Pronaos length,	6.858	7.442	7.750 (?)	9.500 (?)	4.881
Thesauros "	27.016	19.211	28.250 (?)	24.500 (?)	13.142
Adyton "	6.040	10.990	5.000 (?)	7.237	6.475
Pteroma breadth,	6.761	7.090	7.560	5.518	3.637

ELEVATION MEASUREMENTS.

	C.	D.	S.	R.	A.
Height of krepidoma,	2.221	1.571	1.056	1.936	1.314
" " column,	8.623	7.512	9.110	10.187	6.235
" " entablature,	4.258	4.092	3.961	4.510	2.791
" " architrave,	1.760	1.581	1.516	1.759	1.105
" " frieze,	1.489	1.482	1.492	1.721	1.051
" " cornice,	1.009	1.029	0.953	1.030	0.635
" " pediment,	3.070	3.840	3.620	3.300	2.150
" " temple = col. + entab.	12.881	11.604	13.071	14.697	9.026
Breadth of triglyphs,	1.110	1.013	1.012	0.975	0.636
" " metopes,	1.123	1.209	1.250	1.380	0.902
Three axis widths	13.262	13.200	13.816	13.500 (?)	9.128 (?)

COLUMN MEASUREMENTS.

	C.	D.	S.	R.	A.
Height of shaft	7.587	6.578	8.230	8.853	5.428
" " capital (+ abacus)	1.036	.934	.880	1.334	.807
" " neck of capital	.326	.218	.222	.271	.213
" " echinus	.324	.357	.324	.555	.319
" " abacus	.386	.359	.334	.508	.275
Upper diameter of column	1.502	1.149	1.245	1.796	1.058
Lower " " "	1.944	1.669	1.818	2.229	1.342
Breadth of abacus	2.522	2.224	2.410	2.818	1.652
Front intercolumniation	2.477	2.731	2.682	2.376	1.701

ENTABLATURE MEASUREMENTS.

	C.	D.	S.	R.	A.
Breadth of entablature	23.483	23.006	23.618	24.762	16.095
" " frieze	"	"	"	"	"
" " cornice	24.797	24.100	25.300	26.670	17.407
" " pediment	"	"	"	"	"
Length " entablature	63.260	54.471	60.970	67.293	40.440

From these measurements, which are made in metres and fractions of metres, we derive the following tables of proportions. These proportions, it will be observed, concern the ground-plan, the elevation, the columns and the entablature, including the gables or pediments. Some of these proportions, it will be observed, resemble Semper's norm in being expressible as quadrangles. The first proportion, for example, gives the quadrangle of the stylobate. Others may be designated as linear proportions, since they express the relations between lines. The second of the ground-plan proportions, giving the relation of the length of the cella to the length of the stylobate, is of this character. All of the proportions here given are either linear or rectangular. Both kinds of proportions we have regarded as important, though for present purposes it is unnecessary to group them separately. More fully expressed, the first of these proportions would read as follows: Breadth of stylobate : Length of stylobate = x : 1. The value of x is found by dividing the first term of the proportion by the second, and it is these values which we have expressed numerically in our tables. A considerable number of such proportions are tabulated by Hittorff (calculated by his son Charles) in *Livre Septième* of the text, but no systematic use is made of them as norms to determine the chronological sequence of the temples.

GROUND-PLAN PROPORTIONS.

	C.	D.	S.	R.	A.
1. B. of stylobate ÷ L. of stylobate,	.376	.430	.395	.373	.403
2. L. of cella ÷ L. of stylobate,	.637	.694	.659 (?)	.737 (?)	.723 (?)
3. B. of cella (exter.) ÷ B. of stylobate,	.437	.402	.386	.564	.549
4. B. of cella ÷ L. of cella,	.258	.249	.228 (?)	.285 (?)	.306 (?)
5. Surface of cella ÷ surface of stylobate,	.278	.279	.251 (?)	.416 (?)	.397 (?)
6. L. of pronaos ÷ L. of cella,	.168	.194	.191 (?)	.190 (?)	.166
7. L. of thesauros ÷ L. of cella,	.664	.502	.694 (?)	.490 (?)	.445
8. L. of adyton ÷ L. of cella,	.148	.287	.123 (?)	.145	.219
9. B. of pteroma ÷ lower diameter,	3.478	4.248	4.159	2.476	2.710

ELEVATION PROPORTIONS.

	C.	D.	S.	R.	A.
10. Height of krepidoma ÷ H. of Temple,	.173	.135	.088	.132	.146
11. " column ÷ H. of Temple,	.669	.647	.697	.693	.691
12. " entablature ÷ H. of Temple,	.331	.353	.303	.307	.309
13. " architrave ÷ " "	.137	.136	.116	.120	.123
14. " frieze ÷ " "	.1156	.128	.101	.1170	.1166
15. Height of cornice ÷ " "	.078	.089	.073	.0701	.0704
16. " pediment ÷ " "	.23834	.331	.277	.225	.23831
17. Breadth of triglyphs ÷ " "	.086	.087	.077	.066	.070
18. " metopes ÷ " "	.087	.104	.096	.094	.100
19. Three axis-widths ÷ " "	1.030	1.138	1.057	.919	1.011
20. Height of temple ÷ B. of stylobate	.5361	.489	.5356	.581	.548
21. " krepidoma ÷ " "	.092	.066	.043	.077	.080
22. " column ÷ " "	.359	.317	.373	.403	.379
23. " entablature ÷ B. of "	.177	.173	.162	.178	.170
24. " architrave ÷ " "	.073	.0667	.062	.070	.0672
25. " frieze ÷ " "	.062	.063	.061	.068	.070
26. " cornice ÷ " "	.040	.043	.0391	.041	.0386
27. " pediment ÷ " "	.128	.162	.148	.130	.131
28. " entablature ÷ H. of column,	.494	.545	.435	.443	.448
29. Height of Temple ÷ L. of stylobate,	.202	.210	.212	.217	.221

COLUMN PROPORTIONS.

	C.	D.	S.	R.	A.
30. Height of shaft ÷ Height of column,	.879	.876	.905	.868	.871
31. " capital ÷ H. of column,	.120	.124	.097	.131	.129
31. " neck of capital ÷ H. of column,	.038	.029	.024	.027	.034
33. " echinus ÷ " "	.038	.048	.036	.054	.051
34. " abacus ÷ " "	.045	.048	.037	.049	.044
35. " column ÷ lower diameter,	4.436	4.501	5.011	4.570	4.646
36. " shaft ÷ " "	3.903	3.941	4.526	3.976	4.045
37. " capital ÷ " "	.533	.560	.484	.598	.601
38. " abacus ÷ " "	.199	.215	.184	.228	.205
39. Upper diameter of column ÷ lower diameter,	.773	.688	.685	.806	.788
40. Lower " " ÷ H. of Temple,	.151	.144	.139	.152	.149
41. Upper " " ÷ " "	.117	.099	.095	.122	.118
42. Height of abacus ÷ Breadth of abacus,	.153	.161	.139	.180	.166
43. " capital ÷ " "	.411	.420	.365	.473	.489
44. Lower diameter of col. ÷ average front intercolumniation,	.785	.611	.678	.938	.789

ENTABLATURE PROPORTIONS.

	C.	D.	S.	R.	A.
45. Height of architrave ÷ Height of entablature	.413	.386	.383	.390	.396
46. " frieze ÷ " "	.350	.362	.377	.382	.376
47. " cornice ÷ " "	.237	.252	.241	.2283	.2275
48. " entablature ÷ Breadth "	.181	.178	.168	.182	.173
49. " frieze ÷ " "	.0634	.064	.0631	.070	.065
50. " cornice ÷ B. of cornice,	.041	.043	.038	.039	.036
51. " pediment ÷ B. of pediment,	.1238	.159	.143	.1237	.1235
52. " triglyphs ÷ B. of triglyphs,	1.341	1.463	1.474	1.265	1.653
53. " metopes ÷ B. of metopes,	1.326	1.226	1.194	1.247	1.165
54. Breadth of triglyphs ÷ B. of metopes,	.988	.838	.810	.707	.705
55. Height of entablature ÷ L. of entablature	.067	.074	.064	.066	.068

Having tabulated these proportions in such a form that their values may be readily compared, let us assume that the chronological series would exhibit an ascending or descending series of these numerical values. It would be evidently an arbitrary assumption should we adopt in every case an ascending series or the reverse. We need, therefore, some external assistance to guide us in determining the nature of the sequence. This assistance we may obtain in the general assumption that temples C and D are early, and that R and A are late. We here take it for granted that the form, mode of construction, sculptures, etc., of C and D are more archaic than those of R and A, without assuming the individual priority of C to D or of R to A. By the aid of this general assumption, when C and D are found to have higher values than R and A, our proportion may be arranged in a descending series. When C and D have smaller values, the series is an ascending one. Applying, therefore, our general assumption to each series of proportions considered as a norm, we reach the following results:

GROUND-PLAN NORMS.

On the following assumptions, the chronological sequence becomes:

1.	Assume a narrow stylobate to be early,					R	C	S	A	D
2.	"	"	short cella	"	"	C	S(?)	D	A(?)	R(?)
3.	"	"	narrow "	"	"	S	D	C	R	A
4.	"	"	" "	"	"	S(?)	D	C	R(?)	A (?
5.	"	"	small "	"	"	S(?)	C	D	A(?)	R(?)
6.	"	"	long pronaos	"	"	D	S(?)	R(?)	C	A
7.	"	"	" thesauros	"	"	S(?)	C	D	R(?)	A
8.	"	"	" adyton	"	"	D	A	C	R	S(?)
9.	"	"	broad pteroma	"	"	D	S	C	A	R

ELEVATION NORMS.

10.	Assume a high krepidoma to be early,					C	A	D	R	S
11.	"	"	low column	"	"	D	C	A	R	S
12.	"	"	high entablature	"	"	D	C	A	R	S
13.	"	"	" architrave	"	"	C	D	A	R	S
14.	"	"	" frieze	"	"	D	R	A	C	S
15.	"	"	" cornice	"	"	D	C	S	A	R
16.	"	"	" pediment	"	"	D	S	C	A	R
17.	"	broad triglyphs		"	"	D	C	S	A	R
18.	"	narrow metopes		"	"	C	R	S	A	D

19.	Assume broad axis-widths to be early,	D	S	C	A	R
20.	" low temple " "	D	S	C	A	R
21.	" high krepidoma " "	C	A	R	D	S
22.	" low column " "	D	C	S	A	R
23.	" high entablature " "	R	C	D	A	S
24.	" " architrave " "	C	R	A	D	S
25.	" low frieze " "	S	C	D	R	A
26.	" high cornice " "	D	R	C	S	A
27.	" " pediment " "	D	S	A	R	C
28.	" " entablature " "	D	C	A	R	S
29.	" low side elevation " "	C	D	S	R	A

COLUMN NORMS.

30.	Assume a long shaft to be early,	S	C	D	A	R
31.	" " low capital " "	S	C	D	A	R
32.	" " high neck of capital to be early,	C	A	D	R	S
33.	" " low echinus " "	S	C	D	A	R
34.	" " high abacus " "	R	D	C	A	S
35.	" " squat column " "	C	D	R	A	S
36.	" " " shaft " "	C	D	R	A	S
37.	" " low capital " "	S	C	D	R	A
38.	" " high abacus " "	R	D	A	C	S
39.	" " strong diminution " "	S	D	C	A	R
40.	" " thick column (at base) " "	R	C	A	D	S
41.	" " slender " (at summit) " "	S	D	C	A	R
42.	" " low abacus " "	S	C	D	A	R
43.	" " " capital " "	S	C	D	R	A
44.	" " wide intercolumniation " "	D	S	C	A	R

ENTABLATURE NORMS.

45.	Assume a high architrave to be early,	C	A	R	D	S
46.	" " low frieze " "	C	D	A	S	R
47.	" " high cornice " "	D	S	C	R	A
48.	" " " entablature " "	R	C	D	A	S
49.	" " " low frieze " "	S	C	D	A	R
50.	" " " cornice " "	D	C	R	S	A
51.	" " " pediment " "	D	S	C	R	A
52.	" " broad triglyphs " "	C	D	S	A	R
53.	" " narrow metopes " "	C	R	D	S	A
54.	" " broad triglyphs " "	C	D	S	R	A
55.	" " high entablature on long side of temple to be early,	D	A	C	R	S

In explanation of this table of norms, it is to be observed that such terms as " high " and " low " are to be interpreted by means

of the standards of comparison used at the time. Thus a "high" and a "low" frieze, a "high" and a "low" abacus, a "long" and a "squat" shaft, are all assumed to be early, but these members are described as high or low, long or squat, in reference to different standards of comparison. The standards used are the denominators or second terms of comparison given in the tables of proportions.

In regard to the usefulness of such tables of proportions, and their application as norms, it may be broadly affirmed that whenever we are entitled to assume a gradual growth or decline, without reactions, such tables give us at least the means of measuring the amount of growth or decline that has taken place in some particular member. But if we are inclined to make any one of these norms, such as Semper's (No. 19) or Benndorf's (No. 3) the guiding principle for the determination of the sequence, we have merely to glance at the fifty-four other chronological norms and see how different is the result according to our choice. Which one of these fifty-five norms shall be king? For us it is impossible to select any one as the determining norm, since we cannot assume that Greek architects were, like Semper, interested only in one class of proportions.

The second question which we raised above is a more difficult one. May there not be some combination of norms, sufficiently representative to be practically determinative of the question at issue? Even if we admit that special causes may arise to invalidate the claims of any particular norm, is there not some method of reaching an exact numerical ratio representative of a combination of proportions which may be of practical value in determining a chronological sequence? From the proportions we have already given we might readily select a certain number of norms and combine them, but in the presence of the rest how could we justify the right of this aristocratic body of norms to rule the rest? Let us then admit to every norm some share in the governing function and count the votes. We thus find, in taking the ballot for the ground-plan norms, that C has 1 vote for the first place (*i. e.*, the oldest temple), 3 votes for second place, 4 votes for third place, 1 vote for fourth place and none for the fifth. In this form it is difficult to compare the votes for one

temple with those for another, so we may consider the votes as fractions of a common denominator and add them. It seems to be convenient in the present case to adopt the number 15 as a common denominator and count a vote for first place as equal to $\frac{6}{15}$, a vote for second place as $\frac{4}{15}$, for third place as $\frac{3}{15}$, for fourth place as $\frac{2}{15}$ and for fifth place as $\frac{1}{15}$. We have then to multiply the votes by the numerators of their corresponding fractions and add the results. The denominator, being the same throughout, may be omitted. Thus the total value of the ground-plan votes of C may be set down as 31, of D as 33, of S as 36, of R as 19 and of A as 16. Applying the same process to all the returns we have the following results:

VOTES.

	Ground-plan.		*Elevation.*		*Column.*		*Entablature.*		*Total.*
C.	31	+	77	+	57	+	46	=	211
D.	33	+	82	+	52	+	43	=	210
S.	36	+	47	+	50	+	28	=	161
R.	19	+	46	+	34	+	26	=	125
A.	16	+	48	+	32	+	22	=	118

From this we gather the following

RESULTS.

The sum of the ground-plan norms favors the sequence									S	D C R A
"	"	"	"	elevation	"	"	"	"	D	C A S R
"	"	"	"	column	"	"	"	"	C	D S R A
"	"	"	"	entablature	"	"	"	"	C	D S R A

The sum of all the norms favors the sequence C D S R A.

From this table of results we see how uncertain is the inference even if we gather together into one group a number of norms. The study of the ground-plan produces one result, the elevation another, the columns and entablature a third. A somewhat higher degree of certainty attaches to the sum of all the norms; but even here care must be taken to properly estimate the value of the final sequence. The struggle for first place between C and D is so close that the omission or change of a single norm, even in our long series, would change the final result. Who can say, therefore, from a study of the proportions alone, whether C or D be the earlier temple?

XUM

With regard to S, we are on safer ground when we say that S is transitional between C and D on the one hand and R and A on the other; and this is true, whichever of these pairs we assume to be the earlier. In regard to the relative antiquity of R and A, the returns point in favor of the earlier date for temple R. This is a question which has not been raised by the writers on the temples of Selinous, since they have been satisfied in assigning these two temples to the same general class. The measurements and proportions seem, however, to show that the difference between R and A is greater than that between C and D.

In conclusion, we may remark that the determination of chronological sequence by means of the data furnished by proportions is a laborious method of reaching a result which may be sometimes attained more quickly in other ways—but cases may arise when this method may be the only decisive method. For this general purpose, and for the sake of all the special inferences which may be drawn, it is highly to be desired that careful measurements should be made on as comprehensive a scale as possible, and that the relations of these measurements to each other should be tabulated in some such way as we have indicated. Nevertheless, when we come to make use of proportions as norms determinative of chronological sequence, great pains should be taken to make the evidence cumulative, since the smaller the number of norms upon which we rely, the less certain, in general, will be the result.

ALLAN MARQUAND.

Princeton University,
November, 1894.

THE NEW FAUN FROM THE QUIRINAL.

[PLATES XVIII, XIX.]

Two blocks to the north-east of the Royal Palace and directly opposite the new Ministero della Guerra there is, on the corner of the Via Venti Settembre and the Via Firenze, an ancient palace site, in area 93 by 155 feet, exclusive of a drive-way on the east. Up to a year and a half ago this space was vacant and the property of the Italian government. On account of the belief, based upon the finding of inscriptions and on excavations carried on in 1885, that the house of the Nummii Albini[1] once stood here, and also, before it, some more ancient building, when the lot was sold to the Methodist Society of Italy for the erection of a large church and publishing house, the usual restrictions were made regarding the ownership of any statuary which might be found underneath the surface. The sinking of some fifty shafts, from 40 to 50 feet deep, which were to be filled with cement and broken stone to make pillars on which the great weight of the new building should be sustained, led to interesting discoveries.

Underneath the palace floors, which were quickly found, the tools rang upon other foundations, and bricks, fragments of pillars and pentagonal tiles of discolored white marble were soon disclosed. Five feet lower down, and fifteen feet beneath the ground level, formidable obstructions in the shape of massive brick walls were encountered. At various levels many fragments, of a more or less interesting nature, were brought to the surface and removed to the new Museo Nazionale at the Baths of Diocletian. Among the more perfect was a Nymph holding in her

[1] A large section of the palace of the Nummii Albini was discovered in 1885 in digging the foundations for the Ministero della Guerra and in prolonging the Via Firenze. See *Bull. Arch. Com.*, 1885, 1; 1886, 17, sqq. An interesting Mithraeum was discovered, in the course of the work, which extended into the area now being built upon.

extended arms a large shell. This may be seen in the Court of the Museum, just to the left of the entrance. The general appearance of the not ungraceful figure suggests that it may have been a garden ornament.

By far the greatest interest attaches to the discovery early in the year of a statue of great beauty of the type of the well-known Praxitelean Satyr reproduced on PLATE XVIII, (*Cf.* JOURNAL, IX, p. 452.) Its importance to the archæological world is yet a matter of investigation. That it is a replica of the Praxiteles type will not necessarily make it of great value; for there are a score of these ancient copies in Italy, some of no great artistic interest. But the members of the Commission immediately felt that this marble was very near to a great original. How near they are yet debating. Unofficial opinions have been somewhat freely expressed, and perhaps by all thus far permitted to see the statue[2] it has been considered, in its listless beauty and graceful idealization of the satyr-like form, quite the equal of any of the Vatican copies; by some it has been rated even above the Capitoline Faun.

The figure is of Parian marble of the most delicate degree of fineness. The discoloration is not great, nor is it marked in any particular part of the statue. As indicated by the photographs, the head and left forearm are still missing. The right arm has been twice broken, one or two toes and a part of a foot needed to be replaced, and the legs were in a number of pieces. But the junctures have been effected with unusual skill, so that the original outlines are faultlessly preserved. The trunk of the tree, against which the figure leans, is largely a restoration.[3]

[1] A special apartment, which will be called the Faun Room, has been prepared for the statue on the west side of the Court of the Museo Nazionale alle Terme Diocleziane. The opening of the room has been delayed in the hope that the missing parts of the figure may yet be found.

[2] The statue has suffered less, in the long years of its burial, than many of the well-known Satyr copies. Nine fractures are easily discernable in the Capitoline Faun, while the nose, almost the whole of both arms with the pipe, and part of the base are restored. Eight junctures are to be seen in the celebrated Vatican copy, No. 406, Sala VI, Galleria delle Statue, and more than twenty in the beautiful No. 120 of the Vatican Museo Chiaramonti. An examination of many Fauns in the collections of Rome, Florence, Naples and Paris shows six to fifteen pieces in the body and limbs, and, almost invariably, that which every student of ancient marbles

Those who recall the Faun from the Villa of Lucullus, now in the Braccio Nuovo, at the Vatican, will have at once a fairly clear idea of the general pose and arrangement of the newly-found statue. It is reproduced on PLATE XIX for the sake of comparison. In each the youths are in the act of playing the flute. The position of the arms is almost identical, though the flute must have been grasped in a different way in the two figures and pointed in a line parallel with the right shoulder in the one, but downward and forward in the other. Both figures lean lightly against a tree trunk at the left hand, standing on the right foot, while the left is crossed carelessly in front and resting only on part of the ball of the foot and the toes. Thus, in the lower part of the body, the pose is the same. The panther skin in each is fastened over the right shoulder, crosses the upper part of the breast and falls negligently over the trunk of the tree at the left. The Lucullus Faun, too, was broken at the neck, as can be perceived on examination. On coming to height and general proportions our comparison begins to fail. The height of the new Faun, with the head, must have been about 1.31 m, or less than the Capitoline figure by perhaps .35 m, and less than the two Vatican copies, Nos. 406, by about .45 m. But it was taller than the Lucullus Faun by at least .2 m, while measurements at the calf, thigh and waist of the latter are sensibly greater.[4] Indeed, on observing the length of the leg and arm, and girth of waist, in proportion to the height, in the new statue, we find that we have one of the most slender and lithe of all the Fauns. Proceeding further in our comparisons to questions of marble, workmanship, technique and, finally, to all that is meant by the artistic conception, the similarity breaks down still further. They are little alike. The rude, chubby and yet not unpleasing form

is quite prepared to find in any statue, the line about the neck indicating the replacement of the head. The Dresden Satyr, which was once in the Chigi Collection at Rome, having been originally discovered at Antium, may even have a head of later chiseling, though this view is not held by the best authorities. The Palatine torso, now in the Louvre, is, of course, entirely without restoration, and with but two (?) fractures.

[4] For the Capitoline and Vatican Fauns see HELBIG, *Führer durch die öffentlichen Sammlungen klassischer Alterthümer im Rom*, vol. I, pp. 14, 55, 145 and 401; and also the authorities there quoted.

of the one is in striking contrast to the exquisite proportions and delicate grace of the other.

It is well known that to Praxiteles was anciently attributed the device of a support at the side of the figure that he might carve into the muscles the thought of relaxation from the upright and necessarily prim position of a body resting squarely on the feet. On seeing the Quirinal Faun one immediately thinks of the Hermes, of the Apollo Sauroktonos of the Vatican, of the Seilenos with the baby Dionysos of the Louvre, as well as of the Faun replicas of the galleries. The poise in our figure is so skilfully adapted to the character of the gracefully indolent flute player as to afford, by the falling away from an upright position, a moulding of flesh and muscle which suggests not alone rest, but action at rest, while an opposite extreme of too great dependence of the body, which is perhaps felt in the Seilenos, is avoided.

The panther skin has quite lost its suggestion of a covering. This thought possibly remains in the Louvre, Capitoline and many other copies where the skin is worn in a sash-like manner, with the head hanging rather low on the breast. It has been fancied that Praxiteles, in his redemption of the Faun from the goatish conception of the old satyr to the refined grace of the beautiful boy, as in the Capitoline statue, could not bring himself to any other characteristic of a satyr than the pointed ears under the curls, and therefore the panther pelt was purposely so draped as to avoid the whole question of a tail. Perhaps the fancy should not be seriously discussed. Had it any force it would be easy to suggest that this new marble has gone even further in its humanization of the satyr. It denies the need of any such disguise. An examination of the back of the statue shows that perhaps no satyr was ever chiseled where the curving outlines from shoulder to hip expressed more daintily the refinement of human beauty: with such a form even pointed ears under the curls would fail to harmonize.

The claim of the new Faun to a place by the side of the Capitoline will naturally be based upon more than one detail of its composition. Its technique shows the same wonderful skill. It has what Brunn must have intended when he spoke of "fulness of beauty—supported by a flawless osseous structure, although

this remains hidden to the eye." What would be added by the finding of the head one can only conjecture. Perhaps something would be lost. But even in its imperfect state it conveys much the same sentiment as its counterpart on the Capitoline, namely, that of the loftiest conception of the "frisky thing, neither man nor animal, but a being in whom both races meet on friendly ground."

MYRON R. SANFORD.

Middlebury College,
December, 1894.

AMERICAN EXPEDITION TO KRETE UNDER PROFESSOR HALBHERR.

At the annual meeting of the Council of the Archæological Institute in May of last year (1893), the island of Krete was chosen as a field for exploration, and an invitation was extended to Prof. Federico Halbherr, of the University of Rome, to take charge of the work. This choice was due to the fact that Prof. Halbherr had been in charge of the first, most important and almost the only scientific excavations carried on in Krete, during 1884–6. He excavated at Gortyna under the auspices of the Italian government, discovering there, beside many archaic inscriptions, the queen of Greek inscriptions, the Gortyna law code; and then worked at Mt. Ida, in the famous cave of Zeus, at the request of the Greek Syllogos of Candia, where he discovered among many other objects the famous votive shields of the post-Homeric age.

Prof. Halbherr accepted the task and went to Krete in the autumn of 1893, expecting to encounter but few difficulties, in view of the cordial coöperation of the Greek Syllogos, which had entrusted him with the publication of the Corpus of Greek Kretan inscriptions. He found, however, that during the few years of his absence the political conditions had undergone a decided change, unfavorable both to the Greek population and to archæological research. Negotiations for permission to excavate were prolonged for many months, although a permit facilitating archæological investigation throughout the island was granted after long consideration. The autumn and winter months passed, therefore, in travel and investigation through little-known parts of the island, in the copying of inedited inscriptions and the studying of recently-found or previously unobserved antiquities. An attempt to systematically investigate the wall at Gortyna, where the famous Code inscription was found, was frustrated by the determined hostility of the inhabitants, who objected to the necessary deflection of the stream feeding the mill which washed this wall.

What follows is taken from Prof. Halbherr's letters.

The plan of work which Prof. Halbherr outlined on accepting his mission was briefly as follows, it being taken for granted always that

the requisite permit to excavate must be obtained. The sites which until this last visit seemed to promise the best results were Gortyna, Lebena, Eleutherna, Itanos and Praisos. Knossos was not considered, out of regard for the French School, which was known to have this site in view. At GORTYNA the central point is the ancient Agora, and especially that part of it containing the circular building, with the great code inscription, and its annexes. It was made quite clear by Halbherr's previous excavations that other legal inscriptions of the same period must exist at this point. The part of the Code already found covered merely a section of the *jus privatum*, and fragments found dispersed prove that the walls still unexplored are likely to yield other large sections of the laws which were at that time codified. While excavation at Gortyna is undoubtedly the most important work to be undertaken on the island, it is also that surrounded with the greatest difficulty, and involving the greatest outlay of time and money, owing to the unusual value of the land, irrigated by the stream whose course must be deflected, thus rendering useless the mill which supplies the village, and, in their eyes, endangering their entire system of irrigation. Even were these difficulties overcome, there remain expensive hydraulic works to be undertaken at the excavators' expense. Hence it would not seem possible to undertake any but a very partial exploration, in continuation of the Italian excavations of 1884–6. The second more important site is the temple of Asklepios at LEBENA, one of the most famous Kretan sanctuaries, and but little inferior to Epidauros as a centre of the cult of the god. A number of statuettes of Asklepios and many inscriptions relating to cures have been turned up on this site, proving its richness. Also some inscriptions of the III century B. C., on blocks of marble, contain fragments of the sacred ritual and parts of decrees relative to the administration of the sanctuary, being the only instances of the kind yet discovered in Krete. They raise interesting questions regarding the magistrates of the city and the functionaries of the temple, and appear to allude to some connection between the sanctuary of Lebena and the city of Gortyna. These inscriptions probably form part of the buried archives of the temple which it would be most important to recover, together with the votive offerings and the architectural remains of the sanctuary. At ELEUTHERNA, in the centre of the island, certain inscriptions have been casually found, of late years, which have exceptional importance, being fragments of law texts, like those of Gortyna, but with a characteristic form of letters. Also a statue in tufa with traces of polychromy, belonging to the primitive period of Greek sculpture, and the only example yet found of the early Kretan school. Eleutherna, therefore, appears to be an

important centre of very early civilization. In the eastern part of the island are Itanos and Praisos. PRAISOS was the centre of the Eteocretan culture, which is completely unknown to us. Here has been found a fragment of an archaic inscription in Greek characters, but in a language not Greek, which is up to the present an enigma, to be explained perhaps by new discoveries on this site, especially of bilingual inscriptions. Some figurines in terracotta from this site, now in a private collection in Candia, possess a character and style quite foreign to Greek and related to Oriental art. At ITANOS are the ruins of a temple, perhaps of Athena, well worthy of excavation.

Outside of these sites there are regions of the island still to be explored and a considerable amount of material already above ground that remains to be studied.

The above plan of work was mapped out before the present unfavorable condition of affairs had been realized, and could, therefore, be but partially carried out this season. Mr. Alden, a graduate of Yale, joined Prof. Halbherr shortly after his arrival in Krete, the Committee of the Archæological Institute having arranged that he should take part in the work of exploration. He took a series of photographs and made copies of a collection of funerary and other inscriptions of Lyttos and its neighborhood, numbering about forty. In view of the unexpected delays and obstacles that arose to prevent excavation, Mr. Alden gave up his work during the winter and joined the American School at Athens.

Many antiquities in the museum of the Greek Syllogos were studied and photographed with a view to publication, and the search for inscriptions resulted in the gathering of over one hundred that are inedited, especially in the eastern half of the island, a large part of which was explored. The most important of the inscriptions found during this early part of the investigations is an imperial rescript, one of the longest inscriptions of the Levant, which will be published and commented by Prof. Mommsen in the next number of the JOURNAL. Another is an archaic Greek inscription belonging to an unknown city, in which a hitherto unknown Kretan magistracy, that of the *ephoroi*, so familiar in Spartan regions, is disclosed. Among sculptured objects placed at his disposal for publication, appear four heads of members of the family of the Emperor Augustus, a head of Commodus, a Hellenistic head of Hera, and a colossal statue of a *Kosmos* or other personage of the Macedonian or early Roman epoch. Acting in conjunction with the Kretan Syllogos or Archæological Society he attempted to secure the preservation of the wall upon which the great

inscription of Gortyna is inscribed, by its purchase and removal to the museum of Candia.

Prof. Halbherr writes on May 14: "The chapters which, in the present condition of my researches in Krete, can be prepared for our publication are the following; [1] Inedited inscriptions of Krete. [2] Fragments of archaic vases of Apollonia. [3] Researches in the necropolis of Kurtes. [4] Four imperial marble heads in the collection of the Greek Syllogos. [5] A Græco-Roman statue and other works of sculpture from Gortyna. [6] Small Mycenæan vase with human head from Knossos. [7] The Latin inscription of Lyttos, illustrated by Mommsen."

During the first half of May Halbherr visited the southern part of the provinces of Amari and Haghios Vassilios, copying a dozen short inedited texts belonging to the temple of Apollon and Artemis at SULIA. They are votive inscriptions of the Roman period of no great importance. At KURTES, near Phaistos and Gortyna, peasants had just discovered the remains of a very ancient necropolis, and here Dr. Halbherr carried on some slight investigations and applied to the Pasha of Candia for permission to excavate a few tombs in a scientific manner. The greater part of the finds, consisting in vases of the last Mycenæan period, with extremely scanty decoration, has been added by purchase to the collection of the Syllogos.

Late in June the elaborate negotiations connected with possible work at Gortyna were brought to a successful close. The Greek Syllogos purchased the part of the land that is between the mill and the river, and also the wall with the great code-inscription. The investigations carried on during June may best be described in Halbherr's own words, written on July 8:

"My journeys of exploration have extended from the heights of Kamares, on the southern slopes of Mt. Ida, as far as the mountains of Lassithi, toward the provinces of Pediada and Rhizokastron. The results have been good. After a partial exploration of the necropoli of Kurtes and Kamares, I made a most important trial in the necropolis of Erganos. Here I excavated three Mycenæan domical tombs, one of which is perfectly preserved. It contained the remains of six bodies with all the sepulchral objects, consisting of different Mycenæan vases, still apparently in the position in which they were placed some thousand years B. C. Everything was gathered together, the position of each object was marked, the tombs drawn, the plans made, and the best-preserved skulls carried off to serve for the study of the race which spread Mycenæan culture throughout Krete. Up to the present not a single necropolis in the island had been studied. Now we have the material from Kamares, Kurtes and Erganos for a first essay

on the primitive necropoli of Krete and as a source of new information on the question of Mycenæan culture in the islands of the Ægean.

"After this I was so fortunate as to discover two cities unknown up to the present. One is the city to which the necropolis on the mountains of Erganos belongs, the other is a large city situated on a height between Lyttos and Inatos. I have drawn up the plan of the first of these, which was rather insignificant; reserving the study and plan of the second (whose name I even hope to establish) until my return from Sitia. But even in this first visit I found in the latter city a few inscriptions, one of them archaic with the names of two *kosmoi*, and a goodly harvest of fragments of fine Mycenæan and archaic Greek vases with representations in relief, as well as a few small prehistoric or Eteocretan stones bearing new syllabic signs that should be connected with the discovery so recently made by Mr. Arthur Evans (see JOURNAL, IX, 3, pp. 417–423). I am also beginning to pay attention to this study of the pre-Hellenic writing of Krete, and every day am gathering some new material for it. Thus during the past week I noted two new signs in two stones discovered at Vorus near Phaistos.

"Dr. Taramelli [a young Italian archæologist recently arrived on a prehistoric mission to Krete] has left on his mission, after having made at my request a large number of photographs. . . The matter in which Dr. Taramelli has most efficaciously aided me has been in the exploration of the Messarà." On his arrival "I requested his aid for a few weeks, and after having done what I mentioned in my last letter, I confided to him two further pieces of work which he has carried out for us with the utmost diligence, and with all the success that could be expected considering the surroundings. He explored a grotto at MIAMÙ, near Lebena, and will prepare upon this subject an illustrated article. He found there some vases of the so-called 'period of Thera,' objects in bone, *etc.*, as well as the remains of a pre-Hellenic dwelling. He then proceeded, with some workmen, to another grotto situated on the slope of Mt. Ida, above *Kamares*. Of this latter investigation, in which numerous remains of very ancient pottery were found, he will report in his contribution on the subject of early Kretan ceramics.

"Among the latest epigraphic finds to which I wish to call your attention, beside the archaic inscription already mentioned, are: a Latin dedication to the Emperor Augustus at Gortyna; a decree of proxeny to a Roman named 'Vipstanus Acceptus,' in the same city; two fragments, one of which is Latin and refers to certain sacrifices, in the wall of the acropolis of Gortyna; and some late funerary inscriptions in the province of Pediada."

In a letter written from Candia a month later, on August 7, Prof. Halbherr says: "I return to the city this morning and am getting ready to leave to-morrow for Axos and several other points in the province of Mylopótamos. I have just completed an excursion in the eastern-most part of the island, that is in the province of Sitia, as well as a further excursion of less importance to Lyttos, making my third to this site. My labors in the peninsula of Sitia were concentrated at PRAISOS, the capital of the Eteocretans. Here I made two attempts at excavating, finding in one case a deposit of archaic terracottas of great importance, and in the other a building of sacred character, perhaps a small *temenos* or altar, which was situated on the third acropolis of the city. This third acropolis was not known up to the present, I think, and I believe myself to be the first to identify it. I shall therefore be able to give in our publication a contribution to the topography of Praisos, a city to which I wish to call the attention of scholars, and where I hope that some day the Archæological Institute will undertake excavations on a large scale. It is here, I believe, that we can find the solution of many problems relating to the earliest peoples of Krete and the sources of the native art of the island. In the meanwhile I have exhumed from the soil of Praisos a considerable number of most characteristic archaic votive terracottas, among which are several πίνακες with representations in relief, the publication of which will produce considerable sensation. . . . Among the small terracottas and *pinakes* is the figure of a man standing, in profile, whose head is covered profusely with hair; it is executed in a style which I do not dare yet to qualify as Hellenic, and it may be an Eteocretan work connected with Asiatic art. There are also fragments of figures of warriors armed with lance and shield, idols of nude goddesses with arms straight and close to their body, as in a well known series of Cypriote examples, *etc.* I regard as of especial importance a small πίναξ in perfect preservation, which bears in relief a rosette or floral ornament, exactly or almost exactly like that which is painted in the fragments of the wall decoration of Tiryns. On the third acropolis I also discovered a few small bronzes of no especial importance, though among them is a handle or ring of a tripod like those so well known, which were found on Mt. Ida and at Olympia.

"I should have pushed forward excavations on the main acropolis, and then in the temple of the city of Itanos, had the firman for excavation come to hand from Constantinople. I discovered no inscriptions: only a small funerary stele with two names was shown me at Vavelli, near Praisos, which I copied. I do not believe there is anything else in the village or in the ruins of the ancient city which I

have explored stone by stone, having camped within its limits for over a week.

"The other sites in the province did not yield much, having been recently explored by Dr. Mariani (during the past autumn) and by Mr. Evans (in the spring). I gathered, however, some new pre-Hellenic alphabetic signs to be added to those discovered by Mr. Evans; also a fragment of archaic terracotta with an archaic Greek inscription on the reverse reading ΔΟϘΝ▨ = Δόρ[σφν], or Δόρ[σων ἀνέθηκε]. I hope to be able to gather sufficient material for a separate article on the pre-Hellenic writing of Krete for our publication.

"At Lyttos . . . I discovered three new *bathra*, two of which bear the same dedication to the emperor Trajan, written in the same terms as the two found last winter, but under different Kosmi: the third is a dedication to his wife, Plotina.

"At Gortyna the Syllogos has deflected the canal which passes above the great inscription, in order to preserve it from the action of the water. In the course of the work three new fragments of archaic inscriptions came to light, thus increasing the value of our epigraphic novelties from Gortyna, which are already considerable."

On August 27 Halbherr writes: "I have in a single trip gone around Mt. Ida, visiting Axos, Eleutherna and Sybrita, entering Messarà from the west, and stopping at Gortyna on the way back to Candia. The material gathered was as follows. At *Axos* (Oaxos): two small fragments of opisthographic stelæ, one containing a treaty between Axos and Tylissos. A terracotta weight with an inscription of the Roman period. At *Eleutherna:* a fragmentary dedication to the emperor Tiberius; another to one of the Ptolemies; three other fragments of inscriptions, one being archaic but unimportant. At *Sybrita:* three sepulchral inscriptions of the Roman period, which with the other funerary *tituli* copied last winter by me at Rettimo, constitute the first and only epigraphic series of this city. A Rhodian vase handle with the inscription ΕΓΙΔΑΜΩΝ◦Ξ ΠΑΝΑΜ◦Υ. At *Gortyna:* a considerable number of inscriptions of different periods."

At the close of August Dr. Halbherr's work was interrupted first by an attack of fever, and then by the terrible illness of Dr. Taramelli, for whom he cared. In consequence of this last misfortune it was necessary for Prof. Halbherr to himself go over the work which he had expected to have done for the Institute by Taramelli. He then took up again his investigations at Gortyna, and was to start on September 24 for one of his last excursions, going to the part of the island lying south-east of Pediada.

CORRESPONDENCE.

THE CIRCULAR BUILDING OF SPARTA.

I thought that the appearance of Mr. Meader's and my own report on the excavations of the Circular Building at Sparta would have made any further comment on Mr. Crosby's ingenious, though quite hypothetical, remarks unnecessary. But Mr. Crosby has since published a second note.

I have before expressed an opinion, which I hold still more strongly now, that, even "at this moment, with the excavations we have carried on, I consider the reconstructions of the ancient topography of Sparta premature." At all events, it is not usual or wise to insist upon topographical hypotheses in the face of the clear facts revealed by the spade.

There are thus a few facts which I must bring out more strongly in view of Mr. Crosby's second note (AM. JOURN. ARCH., April, 1894). Mr. Crosby says in his paper (p. 342): "*But why, it may be urged, should Dêmos have been erected on a huge stone circular platform nearly one hundred feet in diameter! I admit this cannot easily be explained, if, as Waldstein supposes, this platform was actually of that size and shape. From my own observation, however, I should rather regard the diameter as nearer fifty than one hundred feet, and I believe, moreover, that further excavation will reveal the fact that this was not a round platform, but a sort of semi-circular retaining wall, erected with the object of giving the huge image a secure and elevated position close to the Agora and overlooking it.*"

Of Mr. Crosby's observation of archæological data I have no evidence beyond the paper in question. But what is quite unprecedented is the fact that he should not have realized the bearing and understood the meaning of the report on the excavations which was before him. A reading of the report with ordinary care would have made it impossible for him to write his second note.

The diameter, instead of being nearer fifty than one hundred feet, is in reality 43.30 *metres* (nearer 150 than 100 feet). The platform was not *semi*-circular, but circular; for there is even now more than the semi-circle of wall extant, and this in spite of the insertion of the

Byzantine churches, the manifest destruction and reconstruction in later times, and the fact that on the north and northwest sides, where the land has reached the upper level, there was no need of layers of masonry.

I do not know of other instances of a gigantic circular structure to give "a huge image a secure and elevated position."

If Mr. Crosby had inquired into the nature of the statue upon which he bases so much, I could have informed him, in the first place, that the statue was not larger than double life-size. Moreover, from the marble technique, the statue cannot be assigned to an earlier date than the year 300 B. C., and may be much later; while even elementary training in the history of classical architecture teaches that the lower wall with the large *orthostati*, the whole without clamps or mortar, belonged to a very remote period of Greek architecture, and could never have been created for that statue.

The whole structure is of great importance and interest, and suggests many questions yet unsolved. But Mr. Crosby's strictures are without any ground. There can be no controversy with him on these points.

CHARLES WALDSTEIN.

I must remark that when I said that the so-called "Tomb of Leonidas" had the form of a *templum in antis*, I had good grounds for saying this. The name by which it goes in guide-books and among the peasants is no more the one "usually accepted" by serious archæologists than the term "the Lantern of Diogenes" is at Athens.

AMERICAN SCHOOL OF ARCHITECTURE IN ROME.

There has been quite a general wish to see the establishment in Rome of an American School of Archæology and Philology. Professors of Latin at some of our Colleges have interested themselves in the plan, and the Council of the Archæological Institute at its meeting last May appointed a committee that should coöperate with an organized attempt to bring about the foundation of such a school.

In the meantime a trial has been made of another sort and on an independent basis, and an American School of Architecture was opened in Rome this autumn. Whether, through the coöperation of Latinists and archæologists, there may be a consolidation of the various interests, remains to be seen. It is to be hoped for. We print below a communication from Prof. W. R. Ware, of Columbia College, wherein the genesis and character of the new school are outlined:

"Early in the summer a movement was set on foot to establish in

Rome a School of Architecture for the benefit of American students, and particularly of the holders of traveling scholarships in architecture. It appeared that the promoters of the scheme had already made sure of support to the extent of five thousand dollars a year, for three years, by way of experiment. Upon this assurance a Managing Committee was organized consisting of Mr. R. M. Hunt, Mr. C. F. McKim, Mr. W. A. Boring, Mr. W. M. Kendall, Mr. Augustus St. Gaudens, Mr. Edward Simmons, Mr. H. G. Marquand and Mr. J. A. Garland, of New York; Mr. R. S. Peabody and Mr. Martin Brimmer, of Boston; Mr. D. H. Burnham and Mr. Franklin McVeagh, of Chicago; Mr. George E. Leighton, of St. Louis, and the chiefs of the departments of Fine Arts or of Architecture in the principal colleges which maintain courses in Architecture, namely, Professor Norton, of Harvard College; Professor Chandler, of the Massachusetts Institute of Technology; Professor Ware, of Columbia College; Professor Babcock, of Cornell University; Professor Ricker, of the University of Minnesota, and Professor Laird, of the University of Pennsylvania. A tentative outline of policy was adopted, setting forth that it was the purpose of the founders to maintain a library and work-rooms in Rome, to receive as members of the school only the holders of traveling scholarships and others of equal attainments, that the course of study should cover six months in Rome itself and three or four months in Greece and Sicily and in other parts of Italy, and that while hospitality would naturally and cordially be extended to other persons, and especially to architects and students of architecture, these good offices should not be allowed to interfere at any time with the work of the students or occupy the time and attention of the officer in charge. It was agreed that this officer should have the title of Secretary, and that the work of local administration should be in his hands, the question how far and to whom the privileges of the school should be extended being left to his judgment. It is not impossible that the literary and work-rooms may prove serviceable to the students of archæology and antiquities, and even that, as has already been suggested, some coöperation may be established which shall be of mutual advantage with such students.

"The School of Architecture was opened on the first of November under the charge of Mr. Austin W. Lord as Secretary, and with three holders of fellowships as students, in convenient rooms in the Palazzo Torlonia, at the corner of the Via dei Condotti and the Via Bocca di Leone, between the Corso and the Piazza di Spagna. It is understood that a special prize of the value of fifteen hundred dollars will be offered by some of the promoters of the enterprise, to be competed for this next year by graduates of architectural schools."

NOTES.

A GREEK OSTRAKON.

(Cf. *Journal of Hellenic Studies*, XIII, 121–3.)

In the earlier ostrakon of Mr. C. H. Keene (*Jour. of Hell. Stud.*, vol. XIII, p. 121), χ in line 6 is not to be interpreted with Prof. Mahaffy as χαλκοῦ, but as 600 (*i. e.*, Alexandrian or Egyptian drachmas). In line 7 we should decipher Ἀθηναίων 800 Attic drachmas=2729.3 grammes of silver, 600 Alexandrian=2736 (Müller, *Handb. d. kl. Alt-Wiss.*, vol. I, p. 846). The ostrakon is a banker's draft rather than a receipt; the universality of Attic credit in the fourth century explains the addition of οὐ ἀλλαγὴ ω Ἀθηναίων. The date is admitted to be early. The difference of 7 grammes is perhaps banker's charge for exchange. For the χ=600, *cf.* lines 8 and 10, where ω=800, τέτακται=" is debited upon."

G. Nicklin.

NOTE TO "SOME INSCRIPTIONS FROM THE ARGIVE HERAEUM."

In my article in the last number of the Journal (1894, pp. 357–60), entitled *Some Inscriptions from the Argive Heraeum*, fac-similes were given of all the inscriptions published with a single exception. This omission was due to an error, and in view of the fact that a fac-simile of this very inscription (No. v) is of more importance than any of the

others on account of the peculiar form of several letters, it is here added in explanation of the remarks made in the paper.

J. R. Wheeler.

University of Vermont.

NECROLOGY.

GIOVANNI BATTISTA DE ROSSI. ✠

The death of Commendatore Giovanni Battista de Rossi, at Castel Gandolfo, near Rome, on September 20, removes perhaps the most conspicuous figure among contemporary archæologists. His loss will be felt in an unusually wide circle, far beyond the pale of specialists, and will be felt as the loss not merely of a remarkable teacher and scholar, but also of a sympathetic friend.

By birth and tradition De Rossi was a typical Roman, and his long career, so full of arduous and fruitful labor, will always be connected with the city he loved, and upon whose antiquities and history he shed so much light. Of the seventy-two years of his life a full half century was given to archæological work; and this work was of the kind that is truly epoch-making. It was original and it was broad: it was based upon clearly-defined principles, and it reached out into as many fields outside that of pure archæology as was required for a perfectly rounded knowledge. His work was of three kinds: practical excavation; oral instruction; publication. He had charge of the excavation of the Roman catacombs for many years with great success. His oral teaching was given in many ways: to regular classes as professor in the Academy of Juridico-historical Studies, to the select company that came together for so many years under the title of the Society of Students of Christian Archæology, and to the more general audiences that gathered, on certain festal occasions or anniversaries, in the very catacombs to listen to his masterly improvisations. And, finally, his published works extended in uninterrupted series from 1849 to the time of his death, and form an unsurpassed monument to his science and industry. A catalogue of them up to the year 1892 was given in the volume published by the French School in Rome to commemorate his seventieth birthday; their titles occupy some fifteen pages.

Although De Rossi will always be identified with Christian archæology, he had a strong grasp upon a wide range of other subjects. Ancient Rome was almost as familiar to him as Christian Rome, as is shown by many papers on its topography, society, laws and antiqui-

ties. He was also part editor of the Ancient Roman inscriptions in the Latin Corpus published by the German Institute, of which he was always a principal leader, particularly in the old days of his great friend and compeer Henzen.

Christian archæology was his first and last love, and in it he stood without a peer. He studied it when a mere youth, under Padre Marchi, who was the first in this century to revive the study of the Christian catacombs, sadly neglected since the golden days of the great Bosio. De Rossi became more than the Winckelmann of Christian archæology as a science: he was as well its Ottfried Müller and its Schliemann, for he not only established canons of judgment and a scientific apparatus, but excavated a large part of the monuments to which these canons and apparatus were to be applied. The first centuries of Christianity became in most of their aspects an open book to him. His knowledge of its life, literature, beliefs and history enabled him to solve the difficulties arising in the study of art and archæology.

The criteria which he has established for judging the age of the catacombs, their history and formation, their inscriptions and decoration, will remain as they are now, the norm for all other investigators. The method by which he worked was even more important than the actual work he did. At the same time he was unusually fortunate in being able to carry on excavations unhampered, being for so long in full charge of the catacombs and backed by a large body of enthusiastic admirers. De Rossi's predecessors had made more or less use of the epigraphic material of the catacombs, and had succeeded in identifying many of them, so that his *descriptive* work in these fields is not entirely novel. But the *critical* and analytic department of the study may be regarded as his especial creation, and he was enabled to give for the first time a clear idea of the historic development of the catacombs from the post-apostolic age until the fourth century. As the catacombs now appear, their form was given to them principally in the second half of the third century, after they had entirely ceased to be under the protection of the law. By the application of his methods he was enabled to dissect every large catacomb into its several units, tracing its gradual growth, showing what were the primitive nuclei, and associated nuclei, with the primitive condition and gradual accretions of each, showing when and where new galleries were dug below and beside the earlier ones, how and when the nuclei were joined. His ability to date inscriptions by means of variations in formula and form of letters, and to determine the age of frescoed and other decoration were important means in obtaining the above result.

He was also able to trace the history of the catacombs from the time of their disuse in the fourth century, principally by means of mediæval literary sources, which he was the first to employ. He was indefatigable in his study of manuscript sources and collections of Christian inscriptions, itineraries of pilgrims, etc.

In 1861 he commenced the publication of his corpus of the Christian inscriptions of Rome, the second volume of which unfortunately remains unfinished. But his work upon it dates from his first studies, and his earliest writing is an essay composed in 1848, to be read before the Roman Archæological Academy, in which he outlined the entire plan of his work, having already in that year collected about 8000 inscriptions. Shortly after, in 1863, he founded his periodical, the *Bullettino di Archeologia Cristiana*, which he continued up to the time of his death, and all the contents of which are by his own hand. It was the main repository of his special monographs, of his reports on the latest discoveries in the catacombs, of notes even on investigations in Christian archæology outside of Rome—everything, in short, that could not find a place in his larger publications. The studies on the catacombs, which formed the bulk of its contents, are in the same form as the contents of his *Roma Sotterranea Cristiana* and supplement that work. Considering his sole authorship of its contents, I remember very well how great a privilege I esteemed it that he should be willing to print in this review, nearly two years ago, a paper of mine on the Lateran cloister. This *Bullettino* he regarded as the greatest of his works, and being a personal one, desired its publication to cease with his death.

In 1864 De Rossi began and in 1877 he ended his *Roma Sotterranea Cristiana*, in three folio volumes, which has been the one great mine of information on the Roman catacombs, and has given him the greatest fame. He afterwards combined the Early Christian and the mediæval periods in his publication on a large scale of the Christian mosaics of Rome (*Musaici delle chiese di Roma*), with colored plates, illustrating ten centuries of Roman art. Then came his contribution to the mediæval topography of Rome in the *Piante di Roma anteriori al XV° secolo.* The most characteristic and interesting of his researches into Mediæval Roman archæology concerns the families or schools of artists who built and decorated so wonderfully the churches of Rome and its province during the XII, XIII and XIV centuries. He laid the foundation for the knowledge of the sequence and chronology of these artists and their works, by which we who come after him are profiting.

The prince of Christian archæology gathered about him a large number of followers: almost all noted students of Christian archæ-

ology were more or less his pupils. In France such masters as Martigny, Müntz and Duchesne, in Germany Kraus, in Italy Stevenson, Marucchi and many others. The group of archæologists in Naples, the rising school of archæology at the German College in Rome, with its De Waal and Wilpert, and many other names that might be mentioned, are to be regarded as developed entirely under his influence. Like Mommsen for Roman antiquity, he became the focus for a wide network of information, embracing early Christian studies the world over. It would be impossible to avoid the recognition that a large part of this influence was due to the charm of his personality and to his warm-hearted appreciation of the work of others. The writer had the pleasure of intimate association with him for several years at the very commencement of his archæological studies, and will always feel inexpressibly grateful for the praise given to his earliest attempts at original investigation—praise which was the greatest incentive to perseverance. But even more than the praise, I think it was the tone of equality, almost of deference, for the opinions of the very young students which acted as a stimulus.

The outer world of Europe knew him well. Hardly a crowned head or member of a noble house that visited Rome without knowing him. He had, with all his *bonhommie*, something of the air of a *grand seigneur*. The thousands of devout catholics who visit Rome as of old the mediæval pilgrims, knew him well, for he it was who unlocked to them the gates that led into the sadly charmed land of early martyrs and saints: he, who in the very halls where they gathered for worship and the galleries where their bodies lay, would eloquently rehearse the legends of their lives and the history of this catacomb, their resting-place. For many years he acted as cicerone of the catacombs, not merely for parties of friends but for all comers. And so, in the minds of tens of thousands throughout Europe, he is deeply associated with religious sentiment in a way far different from the manner in which other archæologists are thought of. Some idea of this fact can be gathered by a glance at the album containing the names of those who subscribed to the gold medal given him on his sixtieth birthday, and representing almost every country in the world. The affection in which he was held was shown even more by the men who gathered in Rome for both his sixtieth and seventieth birthdays.

A. L. Frothingham, Jr.

REVIEWS AND NOTICES OF BOOKS.

A. ERMAN. *Life in Ancient Egypt.* Translated by H. M. Tirard. With 400 illustrations in the text, and 11 plates. Pp. VII, 570. Macmillan & Co., London and New York, 1894. Price, $6.00.

This work is a translation of Erman's *Aegypten*, published in 1889. It is enriched with more abundant illustrations, but the text remains substantially unmodified by the results of the excavations and discoveries of the last five years. Even though the alterations to be made by thus bringing the volume up to date would have affected, as Erman declares, matters of detail and not the general scope of the work, we cannot help feeling some slight regret that the English translation had not also presented the latest acquisitions of knowledge on the subject. Such a regret, however, is a small matter in comparison with the satisfaction we feel in having this valuable work placed in the hands of a wider circle of English-speaking people.

The scope of this volume is much the same as that of Wilkinson's Manners and Customs of the Ancient Egyptians, but the treatment is more systematic and is inspired by the study of original documents rather than secondary sources of information. The following titles of chapters is a good index of the scope of the book: Introduction; The Land of Egypt; The People of Egypt; History of Ancient Egypt; The King and His Court; Political Conditions in Egypt under the Old Empire; Political Conditions in Egypt under the New Empire; The Police and the Courts of Justice; Family Life; The House; Dress; Recreation; Religion; The Dead; Learning; Literature; The Plastic Arts; Agriculture; Arts and Crafts; Traffic and Trade; War. Under each of these headings there is an admirable survey of the subject and significant observations which will interest even those who are acquainted with more highly specialized treatises. The monuments, especially the wall paintings and reliefs which figure so abundantly in the great Egyptological publications, have been carefully studied by Erman; but even more important in contributing value to his work have been the inscriptions, particularly those contained in

Lepsius' *Denkmäler* and in *The London Select Papyri*. The monuments are thus made to speak to us through the mouth of the people. In spite of the fact that these inscriptions convey but little information in proportion to their length, the author shows rare critical acumen in severing the wheat from the chaff. This leads him to report the shadows as well as the high lights of Egyptian life.

The book is characterized throughout by a strong historic sense of the changes in Egyptian life through the different periods. In every chapter he treats his special theme under the Old Empire, then under the Middle and the New. This fixes his lowest limit at the 20th dynasty. The constitution of Egypt of the later centuries, under the Libyans, Ethiopians, Assyrians, Persians, Greeks and Romans, he considers as too complicated to be treated together with the Egypt of older days.

This volume is full of information, compactly and well expressed, and deserves a wide audience of intelligent readers.

A. M.

SALOMON REINACH. *Antiquités Nationales. Description Raisonnée du Musée de Saint-Germain-en-Laye. Bronzes Figurés de la Gaule Romaine.* 8vo., pp. XVI, 384. Librairie de Firmin-Didot et C^ie^, 1894.

We welcome this as a model catalogue. Five years ago the same indefatigable and accomplished archæologist catalogued the pre-historic monuments of the National Museum at Saint Germain. The present volume comprehends the collection of figured bronzes of Roman Gaul. Though few of these objects can be said to be possessed of æsthetic charm, such a collection is of interest and importance as furnishing material for a knowledge of the Gallic race under Roman dominion. Five hundred and forty-five objects are here catalogued. They comprise Græco-Roman divinities, Keltic divinities, various personages, heads, busts, masks, animals, vases and parts of figured vases, knife handles, lamps and other objects. The volume is introduced by an excursus on the Origin and Characters of Gallo-Roman Art. Here the author sums up the general characters of Gallic, or more widely of Kelto-Scythic art, as consisting:

1. Of a prevalence of geometric decoration;
2. A prevalence of a taste for symmetry above that for the living form, of logic over the imagination;
3. A taste for the employment of bright colors;
4. A taste for perforated work;
5. A tendency to stylization, that is, the transformation of human and animal forms into decorative motifs.

Upon this native stock, which of itself did not lead to figured sculpture, are grafted the tendencies of Roman art. In its essence this is not strictly Roman, but Alexandrian Greek, the art which had impressed itself upon Pompeii and Herculaneum now finds its way directly and indirectly to Gaul, and producing a provincial variation rather than a new type of art.

In a few cases, such as that of the Jupiter of Evreux (No. 1), Cybele (No. 91), the Hermaphrodite (No. 118), Hercules and Antæus (No. 124), and the bust of an Ephebe (No. 213), we find interesting variations from and analogies to well-known statues. Even where there is no such interest in individual objects, it is a valuable piece of work to have properly classified and catalogued a collection concerning the provenance of the contents of which so much is known.

This catalogue belongs to a new class of museum catalogues, of which the Berlin Museum Catalogue of Ancient Sculptures is a distinguished example, and the Boston Museum Catalogue of Greek Vases is another, in which, as far as possible, every object in the collection is reproduced by a graphic illustration.

The chief aim of the author was to reproduce accurately, in a manner sufficient for all ordinary purposes, and at the same time economically, *every object* in the collection. We congratulate him on the successful attainment of this most practical idea.

A. M.

A. Kalkmann. *Die Proportionen des Gesichts in der griechischen Kunst.* Dreiundfünfzigstes Programm zum Winckelmannsfeste der archäologischen Gesellschaft zu Berlin. Quarto, 112 pp., four plates and twelve illustrations in the text. Berlin, Georg Reimer, 1893.

The proper proportions of the face,—the relation of its parts to one another and to the entire figure,—have at all times been of the highest importance to artists, and more than one treatise on the subject has been composed for the purpose of fixing a norm. It may be that the Κανών of Polykleitos was not a book (as Kalkmann, on the authority of Chrysippos, believes), but only a statue from which rules of proportion were to be deduced; at any rate Vitruvius (III, 1, p. 65 ed. Rose and Müller-Strübing) gives rules, derived, without doubt, from some previous writer, showing that at least one writing on the theory of proportions existed in ancient times, while in modern times the subject has been repeatedly handled. The evident importance of these proportions is such that if it can be shown that they were considered by the Greek sculptors as subject to definite rules, and if the changes in those rules introduced by particular persons or at particu-

lar times can be determined, the history of Greek sculpture can be written with a degree of ease and certainty otherwise unattainable.

For several years it has been evident that certain archæologists were paying great attention to the measurements of works of Greek sculpture, not merely for the purpose of determining whether separate fragments belonged together, or the like, but with a view to using the proportions found by measurement as indications of the date and school to which the works belong. If a certain system of proportions can be shown to be peculiar to a certain school, works that show those proportions can be consigned to that school. So F. Winter (*Jahrbuch*, 1887, p. 226) says: "*Das Proportionssystem, nach welchem der Kopf des sog. Theseus construirt ist, muss für eine bestimmte Periode in der attischen Schule kanonische Geltung gehabt haben*," etc., and fixes by measurements the system of proportions for Attic artists of a given period. In another article (*Bonner Studien*, p. 143 ff.) the same writer employs the proportions of the face as found by measurements in determining the origin of the head of Iakchos from Eleusis. No one has, however, published so many or so accurate measurements as those contained in the book before us, nor have the measurements given been tabulated so systematically and comprehensively. If the history of Greek sculpture is to be learned from tables of measurements and proportions, the material is here at hand. Too great praise cannot be given to Kalkmann's diligence in measurement and skill in preparing his tables.

Before beginning his detailed examination of individual works, their proportions, and the canons upon which those proportions are based, Kalkmann gives an introduction on the theory of art in antiquity, Vitruvius' statements concerning symmetry and proportions, the divisions of the face given by Vitruvius, Leonardo da Vinci, Dürer, Raphael Mengs, and Schadow, rules for measuring, and examples of mutual agreement of mechanically accurate copies. Under the last heading, he shows that copies of famous statues are substantially of the same size (which is also the size of the original), except when a famous work is reduced in size to a statuette. The mean measurements of extant copies are, therefore, approximately the measurements of the original.

The remainder of the book is divided into two chapters, treating of the upright and lateral dimensions of the face. Kalkmann takes it for granted that some canon is the basis of the proportions of every face in Greek sculpture, and that the progress of Greek sculpture is from canon to canon. This seems to me to be taking for granted what he should, if possible, prove. Moreover, Kalkmann's tables show hardly a single work that corresponds exactly to any one of the canons

which he assumes. This he would explain by supposing that the sculptors took some dimensions from one canon, and others from another, in which case there seems to be no need of assuming a canon at all, inasmuch as there is nothing to hinder a sculptor from taking measurements or proportions directly from living models, without the intervention of canons. It seems hardly probable that the Greek sculptors derived their proportions from canons, unless they regarded those canons as correct, and if a given sculptor regarded a given canon as correct, he would not spoil his work by taking some proportions from another canon. Kalkmann also seems to think that each artist had one canon to which he always adhered. This precludes all possibility of progress in any artist. It also makes it well-nigh impossible to ascribe any two extant works to the same person.

An elaborate review of Kalkmann's work (by Furtwängler) has appeared in the *Berliner Philologische Wochenschrift*, 1894, pp. 1105–1109, and 1139–1144, to which those may refer who wish to read a discussion of details. Kalkmann's theory of canonical proportions forces him to assign the sculptures of Aegina to the sixth century, and those of Olympia to a time "not later than the first decade of the fifth century." He is also compelled to deny that the "Sauroktonos" is the work of Praxiteles, and to place the original of the Apollo of the Belvedere chronologically before the Hermes of Praxiteles. In several other instances works the dates of which are fixed by direct statements of ancient writers, or by the most certain stylistic evidence, are assigned to new dates solely on the evidence of mechanical measurements. It is hardly necessary to say that such results show that proportions cannot alone determine the relative historical positions of works of art. Kalkmann's work is valuable as a careful collection of accurate measurements and the product of much independent investigation. His theory, however, is disproved by the results to which it leads him.

Four plates and twelve illustrations in the text (nearly all by photographic process) add greatly to the value and beauty of the work. Plates I and II represent the Herakles in the Palazzo Altemps at Rome, plate III the boxer from Sorrento in Naples, plate IV a youthful head in the Louvre. Most of the other illustrations represent heads, though the Diomedes in Munich is represented to a point somewhat below the middle, and the Landsdown Herakles at full length.

HAROLD N. FOWLER.

AL. GAYET. *L'Art Arabe.* Bibliothèque de l'Enseignement des Beaux Arts. 8vo, pp. 316. Paris, 1893.

This volume is intended by the author to be more than a handbook of the art of Islam: it is an attempt to set forth not only the

history but especially the philosophy of this art, its innermost character, and its special æsthetic message to the world; such an attempt, in fine, as had not yet been made. In its appreciation of the historic development of Arab art, it is not based upon larger histories, because no such histories have been written as could fill such a position. M. Gayet's book is therefore rather peculiar: it is a pioneer, and hence cannot be as elementary and simply descriptive as handbooks are expected to be. It advances at times new theories and then becomes argumentative and personal in its support of them, and is obliged to have recourse to detailed proof. For example, in the case of the polygonal system of decoration, which is for M. Gayet the keynote to the spiritual meaning of Arab art, there are geometric demonstrations so intricate and detailed as to require the closest expert attention.

Arab art is both a broad and a vague title. Let us see how the author understands it. We feel at every turn that M. Gayet knows and admires Egypt, and has not only become penetrated by its mystic charm and supersensuous fascination, but has gone so far as to regard it as the land in which Islamic art was formed and developed. His point of view is briefly this: Having in a few years conquered almost the entire Orient, the Arabs, themselves without artistic sense, yet feeling the need of a monumental expression for their new civilization, rejected the external, imitative, material Hellenic art of Byzantium and turned to the Coptic art of Egypt for principles, ideas, and forms, because the Oriental mysticism and idealism, in which the Arab participated, were most perfectly embodied in the Christian Copts of Egypt, the land of Philo, of the Gnostics and the Neo-Platonists. Immediately after the conquest the Copts became the artists of the new civilization, and continued to be during the next thousand years, developing the types that ruled the Mohammedan world.

That there were other forms of Islamic art beside the Egyptian M. Gayet grants. Moorish art, Persian art and the art of the Khalifate are the three main divisions that he recognizes; the latter comprising several branches, among which the Egyptian predominates. The writer pushes aside both Moorish and Persian art for reasons that do not seem at all clear, and confines himself to what he calls the art of the Khalifate—in which he presumably includes Syria and Mesopotamia, with its centres at Damascus and Baghdad. Even of this last division he treats fully only the branch that was developed in Egypt, the object of his book being to prove its supremacy, very much as expressible in a proposition like the following: Mohammedan Coptic art = Arab art; Persian and Moorish art are not Coptic; therefore they are not Arabic.

At the very threshold the re-building of the sacred Kaaba of Mecca, just before Mohammed had declared his mission, was under the direction of a Copt. The first mosque was that built by Amru at Fostat, near Alexandria, and it became the type of subsequent mosques, not only in Egypt, but in the rest of the Mohammedan world, a type which was opposed to the Byzantine. The pointed arch and flat roof were its constructive characteristics, and in ground-plan it consisted of a square court with colonnades of unequal width on all sides. Although during this early period Egypt was not the centre of Mohammedan power, the Copts introduced the rules of their architecture throughout the Khalifate (A. D. 661–744). Even the later art of the Khalifs of Baghdad, the famous Harûn-al-Rashîd, and Al-Mamûn (IX cent.), was Coptic, according to M. Gayet. The author's picture of the Islamic art of the first three centuries of the Hejira is completed by an account of the formation of Arab ornament. He here discusses the question of the use of figures. Did Mohammedan art avoid the human and animal forms because these forms were proscribed on religious grounds, or was the avoidance voluntary? The writer's discussion is interesting and vital to the point of view of the book, for he believes that the Oriental artist was not forced into this path, but took it in order to deliver himself from the external and debasing thraldom of the human figure, so precious to Hellenism, and to express his spiritualism, his mystic idealism, in a rhythmic art of intertwining vines, foliage and flowers, of geometric combinations which were at first simple and tentative, but gradually developed in the following period (X–XII cent.) into a wonderful system of polygonal decoration that could respond to every mood of ecstasy and convey every form of internal sensation.

The second great stage in the development of Arab art, and the first that we can study in existing monuments, is that which flourished under the Fatimid dynasty in Egypt, beginning with the foundation of Cairo in 969. In this great artistic era architecture was changed by the partial adoption of the dome and barrel vault in place of the flat roof, and decoration by the development of the polygonal geometric style and its universal application, though floral ornamentation is not entirely abandoned. The short chapter entitled *Le tracé géométrique des polygones*, showing the geometric formulas for the making of every variety of combination of forms, is extremely interesting. This system was applied to marble decorations, mosaic work, stucco, to buildings, to large and small works of industrial art in every branch. It is certainly most characteristic and most interesting. A large part of the book is concerned with its development, its manifold forms and application to various purposes. M. Gayet,

in explaining the philosophy of its forms, insists that very precise sensations or states can be produced according to the principle at the basis of the combination of lines. He says: *Les polygones réguliers exprimeront entre tous des idées nettes, précises, immuables. Celles de ces figures dont le nombre de côtés est pair reflèteront des sentiments calmes, graves, empreints d'une sérenité douce; celles dont le nombre de côtés est impair, une mélancholie vague, le trouble, l'incertitude qu'entraîne leur manque de symmétrie et d'équilibre; et de la juxtaposition de ces deux formes se dégagera une impression mixte, déterminée par les proportions de leurs combinaisons. Là réside tout le principe de la sensation, obtenue au moyen des entrelacs géométriques. L'entrelacs n'est que l'entre-croisement régulier des lignes tracées dans une figure primaire, un dérivé de cette figure, une superposition de polygones s'entrecoupant dans un assemblage initial. L'expression simple donnée par la forme essentielle s'exalte. Une figure calme aura par l'entrelacs la sensation de l'infini; une figure hésitante, celle d'une tristesse profonde. L'image dérivée de l'assemblage du carré et de l'octogone éveillera l'idée de l'immutabilité éternelle, celle qui a pour base l'heptagone, celle d'un mystère vague et inquiet.*

While acceding fully to the assertion that thoroughly scientific and carefully thought-out principles determined Arab polygonal decoration of all kinds, and no atom of fantasy and chance, one may well hesitate to invest it with so much meaning and psychologic intuition. But I shall avoid criticism until the close of my summary of contents.

Under the last Fatimids and the short Ayoubite dynasty art was no longer so vigorous in Egypt. A great revival and the opening of the third and greatest period in Arab art came with the accession of the Baharite dynasty (1250–1380), when Egypt was once again the centre of Arab civilization. In architecture the great step was the generalization of the use of the dome, which, from being used exclusively over funerary chapels, came to be employed in the mosques, thus leading to a total transformation of architecture. The dome was not spherical, like the Byzantine, but ovoidal in shape, with a grouping of stalactites in the place of pendentives. All the decorative arts blossomed with unparalleled splendor; and mosaics, faïence, stained glass, wood-carving, stucco, all were utilized, mostly under the law of polygonal decoration. In a chapter on the philosophy of Arab art in the XIV century, the writer insists upon its feeling and its spiritual insight, as opposed to the imitative and realistic schools of the West. In a chapter on the role of figures in art, he speaks of the use of the human figure un-realistically, under what he calls the law of polygonal anatomy, and the use of hieratic birds and animals, often pierced with ornamental holes, to show that no imitation, but a purely decorative effect, was intended.

Under the succeeding Bordjite dynasty the architecture remains the same constructively, but it is covered with rich ornamentation in low relief even over the exterior, and all its forms receive greater slenderness and grace, this being especially shown in the development of the minaret. It is noticeable, also, that the polygonal system is largely abandoned in favor of a reversion to the earlier floral designs.

The final chapters deal with the decorative art of the entire period: with mosque furniture, glass, tapestries and stuffs, damascene work, bronzes, arms, wood-inlay, illuminations, calligraphy, *etc.* In all of these branches, with the single exception of damascene work, which is the specialty of Persia, he claims priority or supreme excellence for Egypt. The closing remarks relate to civil architecture, about which there is but little to say.

The illustrations are full and good. A sufficient historic synopsis is prefaced to each stage of the artistic development. The proportion of specific detail to general statement is in the main excellent.

It is nevertheless true that the book stands or falls according to the answer one gives to three crucial questions. This, I am sure, the author would admit. These are:

(1.) Should a handbook of "Arab" art substantially omit the Mohammedan art of every country but Egypt? Yes, says M. Gayet.

(2.) Was Arab art influenced by Byzantine art? No, says M. Gayet; it was intensely and diametrically opposed to it.

(3.) Is the polygonal system of decoration, which is the essence and soul of "Arab" art, the peculiar and exclusive appanage of Egypt? Yes, says M. Gayet; it is the art of a race, not of a religion.

These questions are fundamental because the author's answer to the first determined the scope of his book, that to the second his estimate of the historic position of Arab art, that to the third his view of its inner character and significance. With a writer of a different temperament these questions would not hold so important a place, but M. Gayet is essentially an idealist of a peculiar type, and views art from the psycho-æsthetic standpoint. Let us take up the questions in order. First, why should not the Mohammedan art of Persia or Spain be included in a handbook of Arab art? M. Gayet's answer is that neither Persian nor Moorish art are "Arab," because they are determined by pre-existing formulas, and their individuality is preserved under the Mohammedan domination. For him Coptic art is the only universal characteristic form. He can, however, be convicted out of his own mouth, for he sets out to prove that the Copts already possessed, before the Arab conquest, the essential elements of the style afterwards developed; as, for example, the pointed arch and the germs of polygonal decoration. These, he says, they imposed on

the Arabs. In what way, then, do the Copts stand in a unique position? They also, as well as the Moors and Persians, possessed their "pre-existing formula." That M. Gayet, being especially familiar with Mohammedan Egypt, should wish to write a handbook of its art, well and good, but let him call it by its right title, and not seek to enthrone it in a place that is not its due, under the general title of "Arab art." We still wait for a history and a handbook that shall attempt the difficult task of treating all the branches of Arab art.

In the second place, M. Gayet not only denies that Arab art was influenced by Byzantine art, but attributes to the Copts and Arabs a pronounced opposition and aversion to it. His own contemptuous prejudice against it is vented more than once. The Byzantine hemispherical dome, which to most people has seemed the architectural form that best represents the infinite, is for him oppressive, narrow and material, as compared to the soaring, mystic and spiritual character of the horizontal roof adopted by the Mohammedan Copts! For him the Byzantines were the continuators of ancient Greece, that inferior people of meagre and narrow ideas whose hateful artistic tyranny has been the means of imposing the human figure as the principal object and norm of art. Arab art alone was so idealistic, broad and internal as to discard man and take lines and polygons as its means of expression.

Being endowed with so great a hatred of Byzantine art, M. Gayet easily disposes of its generally received claim to an influence on the formation of Arab art. He cannot in certain cases overlook the fact that Byzantine artists were sent to the Khalifs from Constantinople. In the first instance which he cites of a Coptic artist employed in Arabia, namely the rebuilding of the Kaaba of Mecca shortly before Mohammed's Flight to Medina, he commits a curious piece of suppression. He notes the Copt who was captured with the vessel carrying architectural material, but he omits to mention that there were two artists, the other being a *Byzantine Greek*. In the case of the rebuilding of the mosque at Mecca under El-Walîd, the Greek Emperor sent, according to Es-Sanhûdi, eighty artists, of whom forty were Greeks and forty Copts: by a piece of specious but groundless reasoning M. Gayet concludes that the Copts were the only artists that really constructed the mosque. Besides, it seems as if the presence of any Copts should be regarded as doubtful, for all the artists came, apparently, from Constantinople, and if there were Copts among them they must have been of those who practised the Byzantine style. It is in harmony with his system that M. Gayet should omit the description of the early mosques and other Arab buildings which are examples of Byzantine influence or are known to have

been built by Byzantine artists—such as the mosque of Damascus and those of El-Aksa and of Omar at Jerusalem; and also that he should disregard the evident fact—proved by many Arabic texts—that the rich mosaic and marble decorations of the Arab mosques and palaces was due largely to Byzantine influence, and often to the hand of Byzantine artists.

Finally, the third question is in regard to the polygonal system of decoration, so often referred to. It is true that in Egypt this system reached an unsurpassed degree of perfection, elaboration and universal application. For M. Gayet, "the heart of a race beats" in it; it is "one of the strongest expressions of the human mind," and may be considered as "the essential character of all Islamic art." I shall not attempt here to do more than state: (1) that Byzantine art may dispute with Mohammedan the claim to a prior development of the polygonal system; (2) that hundreds of Byzantine and Italian monuments dating between the X and XIII centuries—which is the very period of the *earliest* Mohammedan examples—show a development of the polygonal system as splendid, as intricate and as scientific as the Egyptian. The mosaic decoration of the pulpits, choir-screens, paschal candlesticks, altar-tabernacles and sepulchral monuments of the Sicilian, Neapolitan and Roman schools cannot be surpassed in Egypt. This I can safely say, because of this branch of polygonal study I have made a specialty.

This being the case, we must admit that Greeks and Italians understood the theory and practice of the polygonal system, and M. Gayet's assertion that it represents the soul of a special race or the essence of a special art is untenable.

A few words of criticism remain. At the very beginning of his book M. Gayet makes the usual statement of the uninitiated—that the Arabs as a whole had always been nomads, and were never influenced by any other civilization. This is quite incorrect. Several dynasties of Arab kings are now known, from hundreds of inscriptions, and we can date back Arab civilization two thousand years B. C. Arabs conquered and settled Abyssinia. Even in the period immediately preceding Mohammed, when the nomadic element had become predominant, there was still the province of Yemen and there were still the Arab Kingdoms of the borders of Persia and Palestine. The pre-Islamic poems and legends show the strong influence of Persia, of the Jews and Syrians. For the period immediately following the conquest, M. Gayet minimises the role of other nations beside the Copts. No orientalist can be in any doubt that the Byzantino-Syrian and the Persian were the two influences that combined with Arab characteristics to form Mahommedan civilization, while it is necessary

to concede a preponderating influence to the Copts in the artistic field of Egypt, although even in Egypt an unprejudiced eye will attribute to the Byzantines a large share in the formation of the decorative style. At the same time we will grant that the Coptic artists, with an art partly original and partly Byzantine, exercised a strong influence at times outside of Egypt. I will even call M. Gayet's attention to an extremely important and early instance of Egyptian artistic influence in Palestine, which seems to have escaped his attention. The great Aksa mosque at Jerusalem was restored in A. H. 425–27 (A. D. 1032–5), by the architect Abdallah ibn el Hasan, of Cairo, by order of the Egyptian Fatimid Khalif Edh-Dhahar. The great inscription recording this fact was copied in the following century. See GUY LE STRANGE in *Pal. Expl.*, Oct. 1888, and in his *Palestine Under the Moslems*, p. 102.

With the exceptions above discussed, M. Gayet's book is a safe one to read, and is always interesting. We hope that many points which it was impossible for him to treat or prove in so limited a compass will receive ample treatment in some future book which should include Christian Coptic architecture and decoration, and should treat more fully of the origins of polygony, which here remain obscure.

A. L. FROTHINGHAM, JR.

GIUSEPPE MERZARIO. *I Maestri Comacini. Storia artistica di mille duecento anni* (600–1800). 2 vols. 8vo. Milan, 1893. Pp. XXVII–696 and XXIII–626.

The artists that give its title to this book are supposed to have originally formed an artistic guild on an island in Lake Como, where they sought refuge, in about 600 A. D., from the Lombard invasion. This association grew in importance and apparently flourished through the greater part of the Middle Ages, its members, as was the wont of mediæval artists, often travelling to other provinces. They were mainly architects, sometimes sculptors, seldom painters.

But this book does not confine itself, as the ordinary reader might expect, to the history of this phase of the art of Northern Italy.

The author's enthusiasm for his subject, combined with his want of discrimination in matters of style, and his fondness for strained and impossible deductions drawn to suit his purpose, make him include in his book the greater part of Italian art and a considerable section of all European art, which he claims to be by the hand or under the influence of these "Maestri Comacini." Nothing escapes his robust appetite and power of assimilation.

Such a book would not deserve mention if it were not for the fact that it gives proof of an immense amount of industry, contains much information that appears to be useful, and often wears an air of plausibility that might deceive the unwary. It is certain that considerable information could be exhumed from its fourteen hundred pages; but it would be impossible to accept anything without verification. Besides, a large part of the text is quite irrelevant, being given up to oratorical display and sophomoric digressions on the culture, geography and history of various European countries. So there is still room for a suitable treatment of the same theme.

A few examples of the author's methods will suffice to show how he manages to include so many different schools and buildings under this Northern School. First, the method of *assumption*. On page 97, vol. I, the famous monastery of Subiaco is mentioned, the first founded by St. Benedict. Here, says he, toward the year 1000, "Lombard artists worked," and here is the first instance of the pointed arch. No proof or even authority is given for the assertion of the presence of Lombard artists: and none could have been given. It is a mere fancy of his brain. The second assertion, about the pointed arch at Subiaco, leads him to claim for his Lombards the priority in the development of Gothic architecture. None but a man who uses prehistoric authorities, as he does, would cling to the fallacy that the use of the pointed arch is in the remotest way necessarily connected with the Gothic style, and especially so in the case of these arches at Subiaco, which are blind arcades.

Another method is what I should not, in most writers, hesitate to call *suppressio veri*, the method by suppression of facts. An example of this is in connection with the other great Benedictine art centre, Monte Cassino. All histories and handbooks mention the fact that shortly after the middle of the XI century Abbot Desiderius sent to Constantinople for artists to decorate the monastery which he was rebuilding. The passage in the contemporary historian of the monastery, Leo of Ostia, is one of the veriest commonplaces of art-history. And yet Merzario says (I, p. 105) that Leo of Ostia states that the artists were Lombard and Amalphitan, not Greek!

The third method is that of deductions from artistic style. The value of the author's judgment in this matter may be more easily imagined than described. One instance will suffice. St. Mark's of Venice one would fancy to be the one structure in Italy that stood firmly in the Byzantine column, without a point of similarity to Lombard structures, except in some very minor points of added decoration. But Merzario sees in the *basilical* ground-plan (it is a Greek cross), in the masonry (whatever he means by that), in certain sculp-

tures, certain emblems, certain arcades, the distinct proof of its construction by Lombards.

A fourth method is assumptive deduction. Here is an instance of it. The Roman artists of the Middle Ages, when they sign their works, often call themselves *Romans*. Now, no native artist of any place affixes its name to his own: consequently these artists who call themselves Roman must be foreigners who have received Roman citizenship: being foreigners they must be, of course, Lombards and "Maestri Comacini." Apparently Merzario is ignorant of two facts: (1) The Roman artists sign themselves after this fashion mainly when working outside of the city; (2) the use of the name of birthplace was a very common one among all classes of Italian artists. But without signalizing any further aberrations, let us draw the veil.

A. L. F., Jr.

William Durandus. *The Symbolism of Churches and Church Ornaments.* A translation of the first book of the *Rationale divinorum officiorum.* With an introductory essay and notes by the Rev. J. M. Neale and B. Webb. 8vo., pp. cxxxv–209.

Symbolism is the spirit of Christian art, and so it is the part of it most elusive and difficult of exact formulation. We live in an age so lacking in sympathy with and comprehension of such symbolism that, with those of us who have some historic appreciation of its reality in the past, there is an inherent distrust of modern interpretations of this symbolism as unlikely to grasp the heart of the matter. But we welcome the words of a man like Durandus, because he was a man of the age of symbolism, and of its last period when encyclopædic statements of accumulated traditions were composed in so masterly a fashion in every branch of knowledge. He wrote at the close of the xiii century his work entitled *Rationale divinorum officiorum*, which soon became one of the most popular of books, and had the honor of being the first secular book ever printed, the *editio princeps* being issued from the press of Furst in 1459. The *Rationale* is a treatise relating to church organization and service, describing the church building and decoration and their symbolism, ecclesiastical dignitaries connected with the church, the sacred vestments, the mass in all its parts, the services of the different parts of the day, and for every day in the year, and for every special ceremony or festival.

Guillaume Durand was a native of Provence, born about the year 1220. His active life was passed, however, in Italy. He attained to fame as teacher of canon law at Modena, and was successively chaplain of Pope Clement IV, auditor of the Sacred Palace, legate to Gregory X, captain of the Papal forces, and finally non-resident bishop

of Mende, refusing the archbishopric of Ravenna. He died at Rome in 1296. His high official position at the Papal court, his versatility, force of character and clearness of intellect, all combine to give authority to what he says. We are here concerned only with that part of his work which treats specifically of monumental and artistic symbolism; that is, the first book, which is here translated.

The translation is preceded by an introduction from the pen of the two learned English Catholic liturgists, Neale and Webb, written in 1842, and suffering from the limitations of that date. For, while unsurpassed in the field of liturgy, these writers show an insufficient acquaintance with the monuments, especially those outside of Great Britain. To be thoroughly well rounded, such a treatise on church symbolism should involve a thorough knowledge not only of texts but of actual monumental history. Nevertheless, the essay is in many ways admirable. It is a warm and able exposition of the traditional Catholic point of view, and should be read by all who have charge of church building in our times to counteract the prevalent utilitarianism, and at times, perhaps, to prevent the fantasy of artists or clergy invading a domain that should be free from individual innovations. Church symbolism is something that is consecrated by the thought and worship of centuries of Christian life and should not be at the mercy of modern untraditional fantasy. If so little sacredness attaches to our Protestant churches, it is largely because they do not stir our religious imagination by any such symbolism, but are nearly always utilitarian: and the two English writers, in a somewhat fierce and rough postscript, call attention to this, and draw a contrasting picture between an ordinary Protestant church and a cathedral. The arguments that they use in favor of symbolism in part A of their treatise are (1) *a priori*, (2) analogical, (3) philosophical, (4) analytical, and (5) inductive. In part B they give examples of symbolism under classified heads, and they close by a sketch of the history of symbolism in England.

However interesting this part of the book is, the translation of Durand's first book is far more so. Here we have, not speculations by the hands of an outsider, but statements of actual symbolic beliefs then current and influencing men's minds and actions daily. By comparing Durand's statements with those of other and older writers, we can see how they are based in most cases upon a long tradition, going back, in some cases, as far as the early Fathers of the Church. Almost every statement in Durand can be controlled and verified by references to church writers, to the *Ordo Romanus* and other church manuals, as well as to the other treatises of a similar description, but less full, such as that by Richard of St. Victor, over a century earlier, which is translated in an appendix to this book.

As it is impossible to give any idea of the contents of Durand's treatise, we can only strongly recommend its perusal.

A. L. F., Jr.

Etienne Beissel, S. J. *Vaticanische Miniaturen=Miniatures choisies de la bibliothèque du Vatican.* With 30 phototype plates. Freiburg im Breisgau, 1893, Herder.

Father Beissel has done a great service by the publication of this volume. In it he reproduces in phototype plates a good selection from the illuminated manuscripts in the Vatican collection. These examples are classified under five heads:

(I) Classic Style, four plates; (II) Western Style, VII–XI cent.; four plates; (III) Greek mediæval illuminations, eight plates; (IV) Illuminations between the XI and XIV cent. in the West, seven plates; (V) The XV and XVI centuries in the West. The plates are either full-size or but slightly reduced, and are for this reason unusually valuable. The letter-press consists of brief introductory remarks, a description of the manuscripts whose illuminations are reproduced, and a descriptive list of the principal illuminations in all these manuscripts beside that selected for illustration. The author is careful to note the colors, in order partially to supply their lack in the plates. His work is scientific, sober and accurate, and the numerous references show ample acquaintance with the literature of the subject. A judicious reticence is shown in regard to dates of manuscripts, and where there is a controversy the different opinions are quoted. In a few cases I believe the date assigned to be rather early. The beautiful illumination (pl. XXI) in the Decretals (Cod. Vat. Pal. lat. 629) belongs to the XIV rather than to the XIII cent., and the style of the plate (pl. XV) from the Greek homilies (Cod. Vat. Graec. 1162) seems later than the XI century. There is also unusual interest in pl. VIII taken from a book of sermons written at Monte Cassino in the XI century (Cod. Vat. lat. 1202), because this manuscript and its compeers (*cf.* Tosti, *Paleografia artistica di Monte Cassino: Longobardo-Cassinense*) shows clearly the very hand or at least the style of the Byzantine artists called to Monte Cassino under Desiderius. This is not mentioned by the author; and as it is called a Lombard manuscript, we are left to infer that he regards its illuminations as belonging to that school. The portrait of Desiderius himself is given on fol. 2, and this MS. is perhaps the most perfect of its class.

We can in closing only express our thanks and the hope that other collections of MSS. may be illustrated as efficiently, so as to give us in time the elements of a history of illumination.

A. L. F., Jr.

ARCHÆOLOGICAL NEWS.

Summary of recent Discoveries and Investigations.

EUROPE.

GREECE.

REPORTS ON INVESTIGATIONS IN GREECE.—Prof. E. A. Gardner gives in the *Journ. of Hellenic Studies* (1894, vol. XIV, 1) a report on excavations in Greece in 1893–4. Under Athens he relates the investigations in connection with the Enneakrounos (?) aqueduct; the building of the Iobakchoi; the wine-press, the columns of the Stoa of Eumenes in front of the theatre of Dionysos; the metope from a sepulchral monument, etc. Then come the discoveries by the French at Delphi and at Delos, by the Germans at the theatres at Magnesia and Tralles, by the Americans at the Argive Heraion and at Eretria, by the English at Abai, by the Greek Society at Mykenai, Thorikos, Eleusis and Epidauros, by the French on the island of Gha, in Lake Kopaïs, etc.

A report on recent excavations in Greek lands and investigations in Greek archæology is made by M. Reinach in the *Revue Archéologique* for July-August, 1894.

ARCHÆOLOGICAL SOCIETY IN BERLIN.—Reports of meetings of the Archæological Society at Berlin are contained in the *Archäologischer Anzeiger*, 1894, pp. 72–88. Besides the conduct of business, the discussion of new books, etc., addresses were delivered as follows: FEBRUARY; *Winnefeld*, on Hadrian's villa at Tivoli (cut); *von Fritze* on a fragment of an alabaster basin from Naukratis (cut), described by Arthur Smith, Catalogue of Archaic Greek Sculpture, No. 116; *Weil*, on the account given in Aristotle's Ἀθηναίων Πολιτεία of Attic coinage. MARCH; *Kekulé*, on the excavations in Magnesia on the Maeander. The temple of Artemis Leukophryene, the Agora and neighboring buildings have been excavated. An elaborate report is to be prepared; *Kern*, on the temple of Zeus Sosipolis on the Agora at Magnesia. APRIL; *R. Heyne*, on the Artemision at Magnesia; *M. Rubensohn*, on

the five epigrams in the anthology on the monument of Themistokles at Magnesia; *Adler*, on the great altar of Zeus at Olympia. MAY; *Diels*, on the fragments of hymns to Apollon, with musical notes, found at Delphi; *Brueckner*, on the development of Trojan Ceramics, and on an inscription from the architrave of Athena Ilias; *Winter*, on a portrait head in the Louvre (Galérie Mollien, No. 3000), probably Mithradates VI Eupator; *Pomtow* on the hymn to Apollon, saying that the character of the letters shows that it is not earlier than 200 B. C.

The *Anzeiger*, pp. 122–125, reports the *June* meeting. *Kern* spoke on Artemis Leukophryene in connexion with an inscription from Magnesia; *Kalkmann* on sculptures found at Delphi; *Pomtow* on inscriptions from Delphi; *Hiller v. Gaertringen* on a votive offering of an astronomer from Rhodes.

SACRIFICIAL FOOD.—In the *Jahrbuch Arch. Inst.* (1894, p. 114–117), P. Stengel, in an article entitled Σπλάγχνα, maintains that the liver, kidneys, etc., were not merely tasted at sacrifices, but were eaten, though chiefly by servants, as the masters preferred the meat.

GREEK EPONYMOUS MAGISTRATES BEFORE THE ROMAN CONQUEST.—In the *Studi Storici*, 1894, No. 2, A. Pirro studies how there arose in the Greek states the custom of assigning a date to public or private, to religious or secular, documents by means of an eponym. Its origin is extremely obscure and appears, according to the writer, to be an imitation of an Oriental custom, as exemplified in Assyria as early as the tenth century B. C. He compares as analogous institutions the *kosmetes* of Crete and the Spartan ephors, and shows how the eponymous Ephors of Thera, Kyrene and Heraklea were derived from Sparta. The writer then studies Corinth and its colony Megara, where the eponym originally had the title of Βασιλεύς; the title being changed afterwards to that of πρύτανις, as shown by the Corinthian colonies of Anaktorion and Korkyra. The prytanis is also the eponym at Kolophon, Teos, Pergamon, Gambreos (?), the Lesbian cities, Chios, Rhegion. The eponymous magistrate at Athens, the Archon, is too well known to require comment. The Archon was also the Eponym in Doris, Lokris, Phokis, the Boiotian League, Chios, Nikaia, Andros, Keos, Tenos, Delos, Paros, Thasos, Euboia: but in many cases the eponym of the league must be distinguished from the eponym of each city. At Kyzikos the hipparch is eponym. At Ezio(?), Samos, Naxos, Astypalaia, Nisyros, Knidos, the eponym is the demiurge, δημιουργός. At Iasos, Mylasa, Aphrodisias, Miletos, Nysa, Priene, Smyrna, the στεφανηφόρος is the eponym. This fact is probably due to the influence of Miletos in Karia. To be noticed here is the strategos, στρατηγός, the head of the κοινόν of the Aitolians, Phokaians, Achaians, Epirots, Thessalians. The eponym at Gela was the hierapolos (ἱεράπολος); at

XUM

its colony Agrigentum, and at Segesta and Melita it was the hierothutes (ἱεροθύτης); at Halikarnassos, New-Ilion, Olbia, Tomi, Oropos, Mantineia, Tegea, Epidauros, Rhodes, Katana, it was the hiereus (ἱερεύς); at Argos the hiereia (ἱέρεια); at Dimê in Achaia the theokolos (θεοκόλος), at Syracuse the amphipholos (ἀμφίπολος), in Lykia the archi-hiereus (ἀρχιερεύς); at Eretria the hieropoios (ἱεροποίος).

At the close of the article is a table of magistrates arranged in the following geographical order: Lykia, Karia, Lydia, Mysia, Bithynia, Pontus, Thrace, Thessaly, Epirus, Akarnania, Aitolia, Doris, Lokris, Phokis, Boiotia, Attika (ref. to C I G), Megaris, Argolis, Achaia, Arkadia, Sparta (ref. to C I G), Greek islands (Thasos, Lesbos, Chios, Samos, Kalymna, Kos, Nisiros, Rhodes, Astypalaia, Andros, Keos, Tenos, Delos, Paros, Naxos, Thera, Euboia, Krete, Korkyra, Melita), Sicily (Gela, Akragas, Segesta, Tauromenion, Katana, Syracuse), Magna Graecia (Rhegion, Heraklea).

THE GORGONEION AND ITS HISTORY.—In the Ἐφημερὶς Ἀρχαιολογική, 1894, pp. 99–112 (pl. 4) A. Th. Philadelpheus publishes *The Gorgoneion in the Mosaic from the Peiraieus.* The Gorgoneion is in the centre of a square mosaic, the remainder of which consists of linear patterns, triangles, and spirals, with an ivy leaf in each corner. The oriental origin and high antiquity of the Gorgoneion are discussed. The word is connected with Semitic *Golgo (cf.* Golgotha, the place of a skull). Three classes of Gorgoneia are distinguished. First the primitive, hideous apotropaion; second (in the fifth century B. C.) heads still retaining some of the early features, but already beautiful, and last, the pathetic type, dating from the Macedonian times. This mosaic belongs to the last class, and is doubtless a copy of some painting.

HERAKLES AND THE HORNED HIND.—At a meeting of the Cambridge Philological Society Prof. Ridgeway discussed the legend of Herakles and the Hind with the golden horns (Pindar, *Ol.* iii. 31). Aristotle (*Poetics* XXV. 5) refers to the blunder made by some poets, who did not know that female deer have no horns (ὅτι θήλεια ἔλαφος κέρατα οὐκ ἔχει). Scholars are right in seeing an allusion to Pindar, who (*Ol.* iii. 31), speaking of the journey of Herakles to the land of the Hyperboreans in search of the golden-horned hind, uses the phrase χρυσόκερων ἔλαφον θήλειαν. On this same journey he reached the "shady sources of the Ister" (iii. 13). But Pindar must share the censure with Euripides, who, in the chorus of the *Hercules Furens,* in which he celebrates the Labors of Herakles, says (375–6):

τάν τε χρυσοκάρανον | δόρκαν ποικιλόνωτον.

Moreover, sculptors and engravers are equally to be blamed. For, on certain coins of Abdera of the fourth century B. C., we find Artemis accompanied by a horned deer, commonly described as a stag (Gard-

ner, *Types*, Pl. iii. 31). Again, all are familiar with the famous statue in the Louvre, commonly known as "Diane à la biche." Here the hind is adorned with antlers. Again, there are at least two gems in the British Museum (763, 765) which show the goddess accompanied by a horned deer. Are all the poets and artists wrong, or does Aristotle err in laying down as universal the absence of horns in female deer? The latter seems to be the true solution. In one species only of all the cervine genus is the female equipped with antlers. The reindeer of Northern Asia and Europe is the exception. Pindar makes the Far North the scene of the quest of Herakles; Euripides indicates the same; and in Roman times there was a popular belief that the hero had visited North Germany ("fuisse apud eos [sc. Germanos] et Herculem memorant," Tac. *Germ.* 2). The capture of a timid deer would have been a mean task for the slayer of the Nemean lion and the Lernean hydra, but the point of the legend lies in the difficulty of obtaining so rare a creature as a horned hind. Occasionally pieces of reindeer horn have been found among the multitudinous antlers and bones of other deer in the lake dwellings of Switzerland and Bavaria, showing that, about 1200—800 B. C., occasional specimens reached Central Europe. It is affirmed that the reindeer was still a lingerer in North Germany in Roman times. If Baltic amber reached Mykenai 1400—1200 B. C., and Homer had a dim notion of a land where the day was very long and the night very short, we need not wonder if the early Greeks had heard a rumor of a strange kind of deer, the females of which were horned.—*Academy*, Nov. 17.

THE ILIAN TABLETS.—In the *Jahrbuch Arch. Inst.*, 1894, pp. 136–165, A. Brüning writes of *The Artistic Originals of the Ilian Tablets* (39 cuts). The reliefs published under the title "Griechische Bilderchroniken," by Jahn and Michaelis and other similar reliefs are shown to agree accurately with the so-called *Ilias Latina*. Fifteen scenes of the Ilian Tablets are represented upon works of art which are evidently derived from great works. The mad Aias may be derived from the Aias of Timomachos, and the flight of Aeneas may go back to Arkesilaos. These scenes, and perhaps some others, are derived from separate works of art, but the greater part of other compositions probably come from cycles or series of paintings, such as are known to have existed in Rome.

LATER ATTIC VASE-PAINTING.—In the *Jahrbuch Arch. Inst.*, 1894, pp. 57–82, A. Milchhöfer writes of *the later Attic vase-painting* (2 cuts). The Attic aryballoi are developed from the lekythos. A list of fourteen earlier aryballoi and thirty later ones is given. Six of the latter are adorned with reliefs. Lesser divisions are connected with the names of various artists. The influence of sculpture upon vase-painting is

shown to be far less than that of monumental painting. Polygnotos probably came to Athens soon after the Persian wars. His influence is seen in vase paintings about 470 B. C. The later series (jungere Reihe) of the fine style (schöner Styl) begins soon after 450 B. C. The Nike-balustrade is later than many works which have been regarded as imitations of it. The invention of many well-known *motifs* belongs to the great painters, not to sculptors.

THE WRESTLERS IN FLORENCE.—In the *Jahrbuch Arch. Inst.*, 1894, pp. 119–126, B. Graef discusses *the Heads of the Florentine group of wrestlers.* The head of the upper wrestler is a modern copy of the head of the son of Niobe No. 253 (Dütschke). This head belongs to the lower, *i. e.*, the defeated wrestler, while the head now placed on the neck of the defeated wrestler belongs to the victor. The original of the group of wrestlers appears to have continued the art of the fourth century B. C., as it may have existed outside of Attica, free from the influence of Lysippos, dependent upon the traditions of the art of Skopas, which are, however, not exaggerated, as in Pergamon, but softened by faithful observation of nature.

AMORGOS.—Dr. Tsoundas has just finished his excavations in the prehistoric necropolis of the island of Amorgos, and the results are of great importance for the study of the Mycenæan and pre-Mycenæan or island age. About twenty *tholos* tombs were discovered containing grave-goods, consisting of terracotta vases, lance-heads, fictile figurines and one figurine in marble of very ancient and pre-Hellenic character. It is thought that the age of these varions objects is not more recent than the beginning of the second millennium B. C.—*Athenæum*, Nov. 24.

ATHENS.—ENNEAKROUNOS AND KALLIRHOË.—In the Ἐφημερὶς Ἀρχαιολογική, 1894, pp. 1–10, W. Dörpfeld writes of *Enneakrounos and Kallirhoë.* In reply to G. Nikolaïdes (Ἐφ. Ἀρχ., 1893, p. 179–186), he maintains that Enneakrounos was not in the bed of the Ilissos, but near the Agora. In early times a spring on the Pnyx hill was called Kallirhoë, but this name is applied by Plato and later writers to the spring in the bed of the Ilissos.

EXCAVATIONS NEAR THE PNYX AND AREIOPAGOS.—The excavations of the past year in the neighborhood of the Pnyx and the Areiopagos, though they did not furnish, as Prof. Dörpfeld had hoped, absolutely convincing proof that the spring Enneakrounos was in this region, did prove that the ground in this part of the city is full of ruins and antiquities. It showed itself so promising a field for excavations that on the recommendation of Dr. Dörpfeld the Greek government has expropriated the land. Mr. Gardner says: "It will thus be possible to clear it entirely and to remove the earth to a distance, instead

of merely turning it over—a necessity which has hitherto cramped the work. Excavations are promised here on a large scale . . and it can hardly be doubted that when all the region in front of the Akropolis, and between the Areiopagos and the Pnyx, is laid bare, some of the most difficult problems of Athenian topography will find their solution, and many ancient buildings or precincts, hitherto known only by name, will be identified."

RESTORATION OF THE PARTHENON.—The committee of architects and engineers appointed to examine into the damage done to the Parthenon by the earthquake of last spring, had scaffolding erected in order to secure a thorough examination. No great damage was found, but certain recommendations were made to ensure stability in view of the gradual shifting of some column drums and a slight dislocation of the west front.

RECONSTRUCTION OF EAST PEDIMENT OF PARTHENON.—In the *Jahrbuch Arch. Inst.*, 1894, p. 83–87, J. Six publishes (cut) a reconstruction of *the central group of the Eastern Pediment of the Parthenon.* The positions and measurements of the figures are regulated by the traces on the slabs of the pediment. The reconstruction resembles the group on the Madrid puteal,—Zeus seated in the centre, facing the right, behind him Hephaistos, before him Athena, with a flying Nike placing a wreath upon Athena's head.

INSCRIPTION OF THE IOBAKCHOI.—In the *Mittheil. Arch. Athen.* (1894, pp. 248–282), S. Wide publishes and discusses the *Inscription of the Iobakchoi*, discovered in February, 1894, between the Pnyx and Areiopagos. The date of the inscription is probably about the middle of the third century A. D. It contains a report of a meeting, followed by the statutes of the thiasos of the Iobakchoi, giving rules for admission, monthly dues, treatment of misconduct, *etc.* Officers were the ἱερεύς, ἀνθιερεύς, ἀρχίβακχος, ταμίας, γραμματεύς, πρόεδρος, and perhaps βουκολικός. The servants are called ἵπποι. The official name of the thiasos was Βακχεῖον. At the meetings there were dramatic representations. In these the Eleusinian deities appear. This points to a connection with the cult of Dionysos ἐν Λίμναις.

HELIAST TABLETS.—In the *Mittheil. Arch. Athen.* (1894, pp. 203–211), S. Bruck writes on the *Athenian Heliast Tablets.* Thirty-two of these tickets are described and twenty published in facsimile. Of these, ten are here published for the first time.

MT. ATHOS.—The monks of Mt. Athos have undertaken to produce a pictorial work illustrating the history, architecture, art, and social life of their unique settlement. All the monasteries have combined for this purpose, but the editor and author of the accompanying (Greek) text will be the monk George of St. Paul's Monastery, whose

intelligence and courtesy are well known to the few privileged travellers who have visited the Sacred Mount. The book will be published at Constantinople. There will be 130 phototypes and some woodcuts, with 150 pages of quarto text. The paintings and the architecture will be adequately given, and will be of the highest interest.—*Athen.*, Nov. 18.

DAPHNE.—MOSAICS.—In the Ἐφημερὶς Ἀρχαιολογική, 1894, pp. 111–122 (Pl. 5), G. Millet discusses *Mosaics of the Church at Daphnion*, and publishes one representing the crucifixion. The Saviour is represented as a corpse, blood mixed with water flowing from hands, feet and side. Below the cross is a skull, above it two angels. At the right stands St. John the Evangelist, at the left the Virgin. Other representations of the crucifixion are discussed, and the date reached for this mosaic is the first year of the XI century. The figures show the desire for gracefulness and slenderness which distinguishes the work of that time from earlier work.

DELOS.—THEATRE.—We quote the following summary by Prof. Gardner of the results of the excavation of the theatre, by M. Chamonard, of the French School: "The plan of the stage buildings is a very peculiar one. They consist of a central structure of two or more stories, surrounded by a colonnade which supported a platform twelve feet high all round; on the front this was finished in the usual manner as a proscenium, at the sides and back it was rougher, having merely square pillars instead of the usual columns and pinakes. Fortunately an inscription has been found relating to this structure, which is of the highest importance for the decision of the disputed question whether the actors had their place on the top of the proscenium or in front of it. In the inscription—which was quoted by M. Homolle at an open meeting of the French School—the proscenium is identified with the λογεῖον. This finally disposes of the assertion that the proscenium in the Greek theatre was not the λογεῖον. The only course open to those who maintain Dr. Dörpfeld's view is to say that λογεῖον does not mean the place from which the actors usually spoke; but considering the use which has hitherto been made of the term λογεῖον in the discussion, such a contention will not be easy to establish."

The theatre was the subject of two addresses at the February meeting of the French School at Athens, one by M. Homolle and one by Dr. Dörpfeld. M. Homolle began by referring to the especial interest of this monument because of its being dated, never having been made over and being commented and documented by a series of contemporary inscriptions found at Delos. These texts are to be found in the accounts of the hieropi who had charge of all the work carried

on in this monument as well as in all the other sacred or public buildings. The earliest belong to the time when the construction of the theatre was not yet completed; the others show its history during the course of about a hundred years. The following is an indication of the references in their chronological order, they being published in the *Archives de l' Intendance Sacrée à Delos*, to which work references are here given:

1) c. 290 B. C., XI: 2) 282 B. C., XVII: 3) 281 B. C., XVIII: 4) 279 B. C., XIX (Cf. *Bull. Corr. Hell.*, XIV, pp. 393, 401): 5) 276 B. C., XXIII: 6) 274 B. C., new text: 7) 269 B. C., XXXIV: 8) 250 B. C., XLVII: 9) 246 B. C., XLVIII: 10) 250–240 B. C., L: 11) 180 B. C., LXXXVII: 12) 170 B. C., LXXXXV.

M. Homolle gives the texts in full in most cases. From them he concludes that the main structure was completed at the commencement of the third century, and that its plan is therefore that of the Greek theatre of the fourth century. Except for the ill-defined work on the periphery (*περιοικοδομία*), all the contracts made by the hieropi relate to the decoration, the marble revetment of the steps, *etc.* The work is divided into sections of between 100 and 200 feet, which are allotted in greater or lesser number, according to the resources of the year. Great activity appears to have reigned between 276 and 246. It then ceases, and we may suppose the building to be completed, for subsequent expenses relate solely to representations. The texts furnish a long list of terms descriptive of the various parts of the theatre and aid in its ideal reconstruction, and they also help in forming an idea of the stage apparatus.

The ruins are divided, as the inscriptions indicate, into four groups: the theatre or cavea, the orchestra, the stage, and the cisterns.

The *orchestra* is the essential part: it forms a circle whose circumference determines the arrangement of the theatre and the site of the stage, the first following the half of the circumference itself, the second being tangent to the opposite side of the circle. The orchestra is surrounded by a drain prolonged at its two ends toward the cisterns. The theatre follows the circumference of the orchestra as far as its diameter, and as far beyond as to form five-eighths of the circle. Its construction is in part artificial, and along almost its entire periphery it is sustained by marble walls (*περιοικοδομία*) of irregular courses. At three-fifths of its height it is divided by a passage which surrounds it (*δίοδος*). The upper part (*ἐπιθέατρον*) is not concentric to the lower (*θέατρον*), nor arranged on the same axis; it is bordered above by a *chemin de ronde* with a hooded parapet. Eight staircases symmetrically arranged give access to the rows of seats from the orchestra as

far as the διάζωμα, dividing the cavea into six equal wedge-shaped sections. Above, the staircases were double in number.

The stage is a large rectangular hall, without trace of inner divisions, with three doors in the side facing the theatre and one on the opposite side. It is surrounded on all four sides by a portico which impinges 3.50 m. on the circle to which the stage is tangent, and follows the lines of a square inscribed parallel to the tangent in the circle, and whose two opposite angles mark the site of two of the middle staircases of the *cavea*. The portico was decorated with doric semicolumns, and was about three m. high. Before it were placed statues (Atlantes, Philetairos of Pergamon, Ergeas). The portico turns at the sides, so as to form, with the theatre walls, the parados. In the spaces between the pillars of the portico decorative panels could be slipped.

This construction is like an immense platform with a hall in the centre for massing the actors, for the entrances and exits, and the machinery. The upper story and the basement are similarly arranged and can be similarly decorated. The first is called the λογεῖον.

The cisterns are divided into eight compartments.

M. Homolle closed by saying that the theatre of Delos corresponds exactly to the rules laid down by Vitruvius. All the arrangements are derived, in fact, from a circle in which four squares are inscribed: the circle marked the limit of the theatre and that of the stage *scaenae frons;* the base of one of the squares indicates the proscenion (*finitio proscaenii*); to the angles of the four squares correspond the ends of the *cavea* (*cornua hemicyclii*) and the eight staircases that divide it into six *cunei*. The proscenium or platform (*pulpitum*) is called also λογεῖον, the place where the actors acted, at a height of 10 to 12 feet. There is the same correctness in the measurements of details, such as benches, passages, *etc.* Vitruvius, therefore, had a thorough knowledge of the Greek theatre, and if he was mistaken, was so only in the interpretation of the use of each part.

Prof. Dörpfeld then, at M. Homolle's request, explained his system regarding the construction of Greek theatres, adding that he found in the theatre of Delos a new and striking confirmation of it. Vitruvius, never having seen any Greek theatres, and knowing them only by plans or descriptions, thought there was an essential difference between them and the Roman, whereas the one is derived directly from the other. The actors always stood in the orchestra, in front of the proscenium which carried the scenery, but was not also roomy enough for the actors. The λογεῖον = proscenium was but seldom occupied by actors, and only by those who represented the gods, as is shown by its later title, θεολογεῖον.

The stage always represented the palace: that of Delos, with its continuous portico, answers exactly to this conception: the scenery was placed in front and around it, but not on it, because it was itself part of the scenery. The actors and the chorus moved in front of the portico and not above it, which would be equivalent to placing them, so to speak, on the first story of the house.—*Bull. Corr. Hellen.*, 1894, pp. 161–68.

Commercial Quarter and Docks.—The *Bulletin de Correspondance Hellénique* (Jan.–July, 1894), gives a short note on the most recent excavations at Delos. MM. Ardaillon and Couve have begun to clear the port and the docks and to study the private houses. The plan is to complete the study of the sacred city by that of the commercial quarter. Its remains are considerable, for Delos was, in the second and first centuries B. C., the main emporium of the East Mediterranean, a rich and luxurious city. Several *chantiers* have been opened: (1) along the shore, in order to find the line of the wharves, the ends of the jetties, to ascertain the arrangement of the basins, and to clear out the warehouses; (2) at the end of the Portico of Philip, where there must be a landing-place, the starting-point of the Sacred Way leading to the Propylaia; (3) in the interior, near the sacred lake, with the object of completing the excavation of the *Schola Romanorum*, of the agora of the citizens of Beyrouth, and in order to find the sanctuary and meeting-place of the Herakleistian Tyrians.

Already success has been attained near the Portico of Philip, where inscriptions and traces of structures have been found. Along the wharves, storehouses, streets and squares are coming to light. Several houses have been cleared, in which have been found marble columns, mosaics, elegant stuccoes, painted decoration.

DELPHI.—M. HOMOLLE'S LAST REPORT.—At the close of the summer M. Homolle sent a further report to the Ministry of Public Instruction on the excavations carried on during the spring, beginning on March 26. Three "chantiers" were in operation: that of the temple of Apollon; that of the treasury of the Athenians; and that of the Helleniko.

Temple of Apollon.—The results of this part of the work have been excessively disappointing. Not a fragment of sculpture has been found that could belong to gables, frieze or metopes. What had been previously so attributed was done erroneously. The only explanation is that the Roman emperors, after the time of Pausanias, had the sculptures removed, piece by piece, with great care. The end of cornice published by Curtius and Pomtow remains unique. Only some lion heads that served as gargoyles have been found in fragments. Fragments of tufa are fairly abundant, but poor considering

the size of the monument and the insufficiency of the conclusions to be derived from them. There are: (1) *drums* of *columns* of two types, channelled and not channelled. In several cases they have fallen in line so that the restoration of the columns at least will be certain. (2) *Capitals:* only ten, and none intact. They do not recall in any way, in thickness of projection, of abacus, or in outline of echinus, the types of the sixth century. The lines, so nearly straight as to have hardly any bulge, are of a thinness and dryness that would lead one to assign a date much later than even the fifth century. Were there but a single example one might regard it as a restoration, but all are alike, and it is hardly possible to believe in a total reconstruction unmentioned by any author. (3) *Triglyphs and metopes.* Judging from the few remaining pieces, only one of which is whole, these two members were united in one block. That found near the S.W. corner bears the trace of a large oblong shield, more than a metre high, recalling the Gallic shield. Pausanias mentions such offerings, but as suspended from the epistyles.

As for the Ionic columns which have been so commonly attributed to the temple, they can have nothing to do with it. There is no warrant for confusing the orders in the temple, and these columns are not only not of sixth century style, but differ so one from another that it seems strange any one could regard them as all belonging to one monument.

The ground-plan of the temple is clear, but it is somewhat difficult to reconstitute it with strict precision. Nothing rises above the foundations, and except two surfaces some fifty metres square at the two ends of the temple, all the courses of the walls have been carried off below the pavement: not a column is in place, nor even a plaque bearing trace of channelling.

It stood on a three-stepped stylobate, was peripteral in form, with six columns on the front and very long sides, the number of whose columns can hardly yet be determined. No hypothesis will be proposed until the fourth side of the temple has been entirely cleared, for it seems to be the best preserved and may yield some decisive indications on the intercolumniations. The temple appears not to have had any internal colonnade. It is arranged in harmony with its character of temple-oracle, like that of the Didymean Apollon. The pavement is interrupted toward the centre by a wide and deep depression, whose length has not yet been fathomed. It is not due to any accident, because the sides are regularly stoned up. It is evident that here is the adyton. This cavity has not yet been cleared of all the objects of which it was full, such as: Archaic inscriptions (offering of the *dekatê* by the *kafueis* after a war; signature of an Athenian (?)

artist Diopeithes); Greek and Graeco-Roman inscriptions (dedication of Philandridas; decrees of proxeny, etc.,); fragments of bases of statues and small marble monuments; architectural details of tufa and marble.

The passages which MM. Foucart and Pomtow regarded as subterranean galleries, are everywhere beneath the building. There is no proof that they were used at any time as passages. They were, on the contrary, only the intervals between the piers connected by walls, upon which the entire structure was made to rest: this was their only use.

It is a peculiar anomaly that there was an almost complete lack of offerings before the facades and the south side of the temple: none were found in place and very few overthrown among the earth.

It is even difficult to determine the ancient level of the soil. The basement of the temple is so crudely built that it was evidently not meant to be seen, and yet the polygonal wall is neither high enough nor strong enough to have sustained an embankment on a level with the temple; nor would it have borne the thrust of a slope. Besides, ancient fragments have been found below the upper line of the wall and the subterranean aqueduct opens at the wall level. The best solution is to imagine a large narrow square at the level of the top of the wall, ending, on the side of the temple, in a line of high steps, which both hid the rudeness of construction and served to support offerings.

Sacred Way.—Fortunately, East and North the Sacred Way is preserved almost intact. Last year the excavations were carried as far as the altar of Chios, placed on the polygonal wall at the point where the road reaches its top, on the very axis of the temple. It seems to have been the principal altar. It rose from a high base of blackish blue calcareous stone, and was connected with the temple, on whose level it was, by a flagging. The Way turns here to the direction E–W. and becomes horizontal. The position is magnificent at this turn-around, and here the monuments were piled up in profusion against the mountain side. Some of the finest were placed here. Here was found, *in situ*, at the very turn, an enormous base with a dedicatory inscription by Gelon, son of Deinomenes. The offering was a golden tripod and a statue of Niké, the works of the toreutician Bion the Milesian, son of Diodoros. Another base, to the right of this one, preserves the close of a dedication . . . [Δεινομέ]νεος ἀνέθεκε . . . *hεττὰ μνâς*. A third, like it, overturned and broken, bore no inscription. The three sons of Deinomenes had sent gifts to Delphi and perhaps these three bases should be attributed to them, unless it be supposed that the offerings of Gelon alone occupied more than one base: (1) the

Nikê; (2) the gold tripod whose weight—[sixteen talents and] seven minae—would then be mentioned. This dedication is alluded to by Diodoros: it was consecrated on the occasion of the victory of Himera, the very year of the battle of Salamis. In the base is fastened a gabled stile with a bull in relief and with a decree for an inhabitant of the city of Kleitor whose heraldic device this animal is; a dozen other steles are inset around about. A marble bench is placed in front, whence a good view was obtained of ascending pilgrims, of processions entering the temple and of priests sacrificing at the altar.

The ancient level remains unchanged since the beginning of the fifth century, for here were picked up other archaic dedications and a number of important sculptures, among which are the following: Two horses of natural size of archaic style, whose harness proves that they were attached to a chariot: precisely in this neighborhood stood two famous chariots, both gifts of the Kyrenaeans, that of Ammon and that of Battus. Three female figures, dancing, as they hold one another's hands, around a column in the form of the stalk of a plant: they wear a short and floating garment, and a polos of bulbous form and decorated with pointed leaves such as one sees on the head of the dancers of Gjölbaschi. This appears to be the base of a tripod. Then came: male torso, probably of an athlete; youthful male torso, wearing chlamys and leaning on a herm, of the hellenistic period; fragment of a metope representing a woman running, of the same dimensions and style as another representing Herakles and a fallen enemy, found on the opposite front; a marble omphalos covered with its woollen net; numerous fragments of columns *en tige de silphium*, which M. Homolle attributes to the Treasury of the Kyrenaeans.

Back of this point the basement of a small building of the usual form and dimensions of the treasuries, is being cleared. Advancing westward, from the ex-votos of Gelon toward the temple, a fine ancient wall is met, partly built up, partly cut in the rock; then a high wall of small, irregular stones, with niches, traces of stucco and paintings, which includes also enormous masses of rock. This runs parallel to the temple at a distance of some ten metres: neither its use or length have yet been ascertained.

In front of the west façade the diggers have begun to open up the continuation of the Sacred Way, uncovering an enormous circular base, some polygonal constructions and the basement of a small Doric structure in tufa. The most interesting discovery here has been a deposit of terracottas and bronzes. In direct contact with the yellow virgin soil is a blackish and violet stratum very compact and hard, with an occasional admixture of ashes and bone, there were found: tripods (stems, bowls, handles, ornamental figures), paterae, sauce-

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pans. With a few exceptions all the terracottas were fragments, and belonged to three different styles: the geometric, proto-Corinthian and Corinthian, which appeared in three very distinct strata. This collection is completed by a very few Mycenaean fragments. The accumulation is not one due to chance, but shows either the presence of an altar or the site of a refuse-heap.

Among the inscriptions found here are: (1) a *Delphic decree*, in response to a letter of King Seleukos, according to the city of Smyrna and the temple of Aphrodite Stratonikis the privilege of the ἀσυλία. (2) Fragments of *imperial* letters. (3) Parts of two slabs with the *accounts of the sanctuary* during the years immediately following the peace of 346, under the archonships of Damoxenos and Archon. In one of them are valuable historic data regarding the reprisals exercised against the Phokidians and their accomplices; the overthrowing of the bases bearing the statues of Philomelos and Onomarchos, excluded from the Sanctuary; destruction of horses and statues, doubtless a trophy of the Phokidians, for their victory over the Thessalians. It contains also information on the architectural works which appear to have been carried on in the temple: furnishing and setting up of lion heads, of epistyles, triglyphs, and cornices; work in the πρόδομος and the opisthodomos; also indications of geographical value and others regarding the body of auxiliary help and the current expenses of the sacred administration, not to mention a geographical list of proxenoi, in great part of the fourth century, completed by later additions, as well as the indications of works of construction divided among a half dozen contractors, of whom the first is an Athenian named Philo.

One base bears the signature of Kresilas of Kydonia, of whom no work had been known to exist at Delphi.

The longest and most numerous texts within and immediately about the temple are of the Roman period and belong to the series of decrees of proxeny or *politeia*. They refer to men of all nations and professions—mainly literary men and philosophers.

Treasury of the Athenians.—Numerous parts of the treasury have been found, proving, contrary to M. Homolle's original opinion, that all four sides were decorated in a similar way with sculptures. Of the pieces of sculpture found; (1) Some were fragments of metopes already known; (2) some were metopes completing series already known; (3) finally come metopes forming a new series. The new series is a *Theseid*. (a) Theseus and the Minotaur. A youth in short chiton, elegantly vigorous, seizes by the head his bull-headed enemy. This composition gives the key for the interpretation of the rest of the series in which the same youth appears; (b) Theseus and Athena. The hero, with raised hand, appears to be speaking to the goddess and

awaiting her orders; (c) Theseus and Kerbyon; (d) Theseus and Periphetes; (e) Theseus and Skiron; (f) fragment with the pine tree of Sinis (?). There seem to be here, therefore, six subjects from the legends of Theseus which would just fill the six metopes of one of the main facades of the Treasury.

One of the sides must have been occupied in common by reliefs of the Geryon series and the Amazonomachy, supplements to the exploits of Herakles and Theseus and suited to accompany them from their combination of human and animal figures. The fourth side is adorned with a series of single combats which M. Homolle has thus far been unable to identify, either singly or collectively. They would suggest scenes from the Gigantomachy were not the gods who took part in the defeat of the giants entirely absent. The sculptures found amount to thirty, which is the precise number of the metopes.

Finally, a horse carved in the round should be mentioned, of larger size than would suit the metopes, and exactly like one discovered last year, but carved inversely. These two formed the upper akroteria of the treasury, at the top of the gables, and each was mounted by an Amazon, symbol of the legendary victories and the recent triumph of the Athenians over the Persians.

Thus the Treasury of the Athenians is now complete, all its decoration having been found. Further courses covered with inscriptions increase also the epigraphic series. Such are: (1) acts relating to the association of the τεχνῖται; (2) catalogues of Athenians sent to Delphi for the celebration of the Pythia (theori, pythiasti, exegeti, phylarchs and horsemen, Kosmetes and Ephebes), or having contributed to the offering of the ἀπαρχαί; (3) Delphic decrees conferring proxeny, citizenship, or the title of βουλευτής on Athenians or foreigners; (4) new musical fragments of which two pieces complete on the right the inscription published in the *Bull. Corr. Hell.*, 1893, p. 608, pl. XXII, and a third large fragment of more than twenty verses joins on to fragment C (B. C. H., XVII, p. 606, fig. 3); all have signs of musical notation.

A section of the Sacred Way being thus cleared it was found, after bending around, immediately in front of the Treasury, to take a right angle assuming the direction W—E which it maintains as far as the east gate of the *enceinte*. It is very wide at this point and forms a kind of square between four monuments: on the N. that of the Athenians; on the S. that of the Siphnians; on the W. that of the Boiotians; on the E. a building still unidentified. Subsidiary roads led from this point eastward and westward. The western road leads in a few steps, on the same level, to another monument in the form of a Treasury, then to a long line of Byzantine walls which appear to be established on ancient substructures as sustaining walls. It passed

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above this wall and, in front of a large base uncovered in 1892, it joined the bottom of the great stairway, ending apparently in a second gate beyond the turn of the Sacred Way, which it avoided.

Treasury of the Boiotians.—This treasury, much smaller than that of the Athenians, rose on foundations of tufa blocks, which belonged to a more ancient structure, apparently of the same origin as the substructures of the Treasury of the Sikyonians, if we can judge by the stone-cutters' marks. The treasury is built of bluish lime-stone of fine quality and in the form of a Doric temple. The identification is made certain by the inscriptions carved on the courses; decrees in favor of Boiotians, and especially of Theban personages; frontier regulations between two Boiotian cities.

There are many names that might be applied to the neighboring monuments, but none are localized so as to make identification at all certain. If the rock of the Sibyl, the *hieron* of the Muses and the Gha are correctly placed by us near the polygonal wall, then the tufa structure overlooking the Treasury of the Athenians might be the *βουλευτήριον*. Other hypotheses would be premature.

Westward, on both sides of the polygonal wall that marks the end of the Sacred Way, have been found houses of late date (Roman and Byzantine), with stairs, well, cistern, domestic altar, remains of stucco decoration, painted terracottas of far earlier date. A deposit of pottery and bronzes like that mentioned above was found under similar conditions, but less important.

Between the Treasury of the Athenians and that of the Siphnians, a few feet from the wall where was found, last year, the Archaic Apollon by an Argive sculptor, there came to light the torso of another statue like it, and of equal dimensions. Here we have the same method of marking the line of the ribs and the middle line of the stomach by simple lines in the form of a reversed anchor, the hairs of the pubs by small incised triangles: same arrangement of hair, bound by a fillet, above which it escapes in puffs, as in the archaic statues of Krete and Arcadia. The two statues are in reality identical, and thus call to mind the Apollons consecrated by the inhabitants of Lipari after their victory over the Tyrrhenians, equal in number to the vessels they had captured.

On the pavement of the Sacred Way lay the top of the base of a statue, in the form of a Doric capital with round and strongly curved echinus. On the front are carved in very low relief and in severe archaic style, two lions devouring a stag. It is a fine specimen of the columns often used in the sixth century as supports of *ex-votos*, as shown by the Akropolis excavations, but it is unique in being carved·

The epigraphic harvest, though abundant, consists entirely of the texts carved in the walls of the treasuries of the Athenians and Boiotians, a base with decrees for the Klazomenians, and stone-cutters' marks and proper names in archaic letters on the substructures of the Treasury of the Boiotians.

The Helleniko.—The exploration of the ground above and below the *Helleniko* wall, so-called in opposition to the *Pelasgikon*, because it is built in regular courses, involved the uncovering of the Sacred Way between the Treasury of the Athenians and the gate of the Temenos.

At the end of May, in front of the large exedra recognized by Pomtow and now completely cleared, there was found another hemicycle, of about the same dimensions, surrounded by a high stone wall built in regular courses, and raised on a high base, which rises more than a metre from the road. A low step surrounds the foot of the wall supporting a course of slabs arranged in arcs of circle and bearing inscriptions. The names of Abas, Akusios, Lynkeus, Perseus, Herakles, appear, together with that of the artist of the statues, Antiphanes of Argos. It is remarkably peculiar that while this signature is inscribed from left to right, all the names of heroes run from right to left: it was evidently desired to give a proper air of antiquity to the members of the ancient royal house of Argos. This monument is the one mentioned by Pausanias in Bk. x, 10, 5, and it gives the key to the surrounding topography.

In front of it was another offering of the Argives, similar in composition, a group of statues representing the *Epigoni:* this is the exedra on the south side of the Way. Next to the Epigoni, descending toward the gate, there came: (1) the "Seven against Thebes," also dedicated by the Argives; (2) the Attic group commemorating the battle of Marathon; (3) the Dourian horse, also a gift of the Argives.

Next to the monument of the Argives is a very long structure, analogous except for its rectangular form. A wall of conglomerate, in regular courses, adossed to the hillside, forms, with two end walls at right angles, a three-sided chamber, entirely open toward the Way, about 25 m. long. A high base, which appears to have had several steps, bordered the Way and partly filled the chamber. One offering only could have occupied so vast a space, and that is the proud trophy of Lysander, which contained some forty figures arranged in several rows at different heights. Its E. end almost touches the boundary wall, which ascends straight up the mountain slope. Therefore the other offerings mentioned by Pausanias at the beginning of his description of the sanctuary must be placed on the other side of the Sacred Way. He says, in fact, that they are opposite the monument of Aigos-Potamos. This arrangement is also in harmony with the

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discovery by Pomtow, on the south side, of the dedication of the Tegeans. As for the base of the bull of the Korkyreans, the work of Theopropos of Aigina, it was found some hundred metres from its place, opposite the altar of Chios.

Having reconstituted the Sacred Way from the Argive offerings to the gate of the Sanctuary, let us pass from the same point to the Treasury of the Athenians.

On the left is a large empty space where there remains only an angle of a wall: here the destruction was complete. On the right a small square chamber of similar construction to the Argive hemicycle; then another, half destroyed, between two niches, and a large polygonal sustaining wall. Here must have stood the monument commemorating the victory of the Tarentines over the Messapians, of which a large inscription in letters 10 cm. high, ΔΕΚΑΤΑΝ, is perhaps a remnant.

Treasury of the Sikyonians.—In front of the sustaining wall, and considerably below the level of the route, are the tufa foundations of a structure in the form of a temple *in antis*, or a treasure house. The substructures, which rest at a great depth on the original soil, are composed of architectural fragments re-employed — architraves, doric columns, and the remains of a circular monument. The coursing signs that have been noted on several pieces are similar to those on the treasury of the Boiotians. On the courses of this monument, inside and about, were gathered tufa metopes, works of the VI century representing: (1) *The Dioskouroi and Idas* bringing back from Messenia the oxen they had captured, and which were to be a fatal cause of dissension for them. The names are painted in black beside the figures; (2) *A wild boar;* perhaps part of a subject (Caledonian hunt?) from their legend; (3) *Two horsemen* in front view, and behind them a vessel carrying warriors with shields; in the centre two figures standing, playing on the kithara. The two names effaced except end of one, ΘΑΞ. The horsemen are probably the Dioskouroi, and the subject from the legend of the Argonauts, in which they took part; (4) *A ram*, who appears to have been represented as carrying a figure, doubtless Hellê; this also belongs to the Argonaut series; (5) *The rape of Europa.*

The painted inscriptions do not have the characteristic signs of the Sikyonian alphabet (Ϙ = Ε); the subjects are not from legends properly Sikyonian; the metopes, also, seem rather large for the monument. Still their good state of preservation and the conditions of their discovery make it out of the question that they could have been employed as material of construction. The tufa capitals found have the severe and somewhat rude beauty of the VI century, and

they also bear no trace of having been utilized as material in a later monument. Notwithstanding difficulties alluded to above, it seems certain that the monument was of tufa, belonged to the VI century, was decorated with sculptured metopes, and was erected by the Sikyonians. The monument which it succeeded could not have been much earlier in date, and has doubtless been overturned by some catastrophe. The sculptures, cut in a tufa of remarkable fineness, are entirely painted; the colors remaining are red, and brown, or black. The attitudes, types, stiffness of garments, the designs that adorn them, all recall the paintings on black-figured vases, as do also the inscriptions that accompany the figures. There is no color on the background.

Treasury of the Siphnians.—A few steps further west there rises, like a bastion, a high square structure which leans at one end against the Helleniko wall and, at the other, on the Sacred Way, dominating both. The lower courses, which are not finished off, were marked by the rising ground and by steps made along the Sacred Way. To the west a platform, sustained by a polygonal wall, formed a small square connected with the Way by steps.

On the species of tower rested a structure in the form of a prostyle temple, with its façade turned to the west, the only accessible side. This also is a Treasure-house and here Pausanias places the Treasury of the Siphnians. This identification is justified by the remark of Herodotos (III, 57) that the treasury of the Siphnians was among the handsomest and richest in Delphi. Now, not only is its position remarkably fine, at the first turn of the Sacred Way, on the corner of a large square, magnificently decorated, at the summit of the enclosing wall, but furthermore, the remains of decorative sculpture—such as the architectural ornaments and the sculptured frieze, show that this monument was erected at a great expense and great search after perfection. I know of no architectural motives that surpass these in gracefulness and firmness of design, in felicitous composition, in clear-cut and elegant execution. Such are the oves, pearl ornaments, and agees that crown the epistyles and friezes, the bands of alternating palmettes and lotuses that frame the door and decorate the γείσα. It is the very perfection of archaism at its close. Fragments of this decoration have been gathered up all around the sanctuary, but as complete pieces have been found only around the Treasury of Siphnians, along the four sides, and that the corner pieces lay at the corners, as they had fallen, there can be no doubt about their identity.

At the time of the discovery of the first pieces of the sculptured frieze, consisting then only of processions of chariots and horsemen and a group of three goddesses, it seemed as if the sculptures might

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belong to the main temple. This view was quickly made untenable by further discoveries showing a combat of heroes, a gigantomachy, mythological or heroic scenes with gods and goddesses—a far greater variety of subjects, in short, than appears on the Vatican bas-relief which refers to the temple-sculptures. Beside, the relation of the sculptures to the Treasury of the Siphnians became more evident, the more were discovered. The identification was completed by the discovery of a gable which, notwithstanding certain differences of handling, was of the same date as the frieze and agreed in length with the façade of the treasury. The dimensions of the treasury are: North and south sides, 8.90 m.; east and west sides, 6.35 m. The sculptures found are the following:

South Side: (1) Scene of rape; bearded man with woman in his arms gets into chariot; (2) head of woman (fragment); (3) horseman mounted and holding another horse; must have been preceded and followed by others; (4) quadriga, found before, and published by Conze and Michaelis; (5) horseman, similar to No. 3, on angle piece, around corner of which is a group of divinities; (6) female head, already known and published in *Annali* (1861, *tav. d'agg.* E.) All these pieces have remarkable unity of style. The figures on return angle of No. 5 are evidently by another hand, but same hand is seen on west side.

West Side: (1) Woman descending from quadriga, a complete slab; (2) Athena, winged, and with aegis, mounts chariot drawn by four winged horses which are held by Hermes, while to the right a figure advances behind the goddess. This slab is a complete corner piece (N. W. corner) and on the return of the angle are warriors fighting who differ entirely in style from those on W. side and are similar to those on E. side.

North Side: (1) N. W. corner slab: two warriors with corslet over a short chiton, wearing the Corinthian helmet, covering themselves with a round buckler, fight over the body of a third warrior whom one attacks and the other defends. A fourth figure turns to the left toward an enemy who was figured on another slab. (2) Upper fragment of a slab with a warrior fighting an enemy to the right while behind him is a quadriga of which there remain part of the horses, at full gallop, and the driver, who turns around to reach an enemy. This enemy is represented on the following slab, No. 3, and next to him on this slab are two warriors, one with lance and the other with a rock opposed to Hephaistos; and further on two more warriors, one with bare head wielding a lance and the other casting a rock at the head of a warrior, doubtless another god, at whose feet already lies one vanquished enemy. The following scene is partly on this and partly on the next

slab. (4) Two combatants, one kneeling, the other standing, fight Athena. This group is of remarkable beauty; the goddess, shield to shield, appears to cast down her enemies without effort, as she calmly advances, and her calm attitude is in striking contrast to the powerless efforts and contortions of her adversary. Here we certainly have the combat between Athena and the giant Enkeladas. Near her is Hera, who by a movement superbly violent has just cast back her enemy and pierces him with her lance, through his buckler. Zeus, who came after the goddesses, must have been represented standing in his chariot, though both are wanting, though the two usual adversaries, the one with the lance and the other with the rock, still remain. (5) This complete slab reproduces two scenes and part of a third. (a) Three warriors advance against Apollon and Artemis who are both drawing their bows and against Dionysos, who is armed with a sword. A fourth enemy lies on the ground. (b) A goddess, doubtless Kybele, on a chariot drawn by two lions, robed in a long chiton and wearing as mantle a wild beast's skin, goes, with Herakles, against two enemies. The hero has the lion's skin wound around his neck and extended over his right arm as a buckler. He is about to shoot at a warrior who threatens him with his lance; the second giant is being devoured by the lions. (c) Two warriors, armed with lances, march to left against an adversary who may be represented on the next slab. (6) Corner slab, whose long side forms part of the east frieze. It contains three figures: a man with long hair and pointed beard, robed in a short chiton, follows attentively, with head bent forward, the incidents of the fight, while one hand is extended open over a large pithos and the other closes a collapsed leather sack. Two women are with him who wear a long chiton flattened in apoptygma. The man appears to be Aiolos who chains and unchains the winds at will.

East Side: (1) N.E. corner. Around the body of a dead warrior four heroes are fighting for his body and arms: on either side is a four-horse chariot driven by the ἡνίοχος, ready to carry the spoil or the defeated one. At the horse's head is a servant. (2) A group of three goddesses seated on stools, talking and observing with curiosity some scene, one touching her neighbor under the chin. The two on the right look toward the left, while the third, Athena, turns toward them to speak. (3) This third slab, at the S.E. corner, continues the assembly of the gods. After a figure of which there remain but the feet and the seat, comes a majestic god on a high-backed throne, with arms supported by a group of a nymph and satyr. This is Zeus. After him, on seats with straight legs, come Apollon, Artemis, Aphrodite, and, on a camp-stool, Ares in his warlike apparel. Zeus looks to the right towards Athena, and the figure on his left, doubtless Hera,

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places her hand on his knee. Apollon, Aphrodite and Artemis form a close group in animated conversation and touch each other with the hand. Ares is indifferent and apart.

Gable: Before this east front were found three pieces of a gable which seemed at first far inferior to the sculptures just described, dryer, harder, and, in particular, more awkward. But its defects are especially due to the difficulties of sculpture in the round and to the restrictions of the triangular space. There are sufficient common characteristics to attribute it to the same monument: the differences are no greater than between the two halves of the friezes, and nothing can be more interesting than these variations of processes and style in contemporary and contiguous sculptures. The subjects also are related. The measurements agree with the size of the treasury. The sculptures represent the dispute for the tripod between Herakles and Apollon. Athena stands in the centre, seeking to appease them. Leto, behind her son, attempts to draw him away. Two female figures on the left, and a woman and a warrior on the right, are walking toward the ends of the gable, turning their backs on the principal figures. The figures both on the right and left are preceded by two prancing horses, before which, on the left, are two figures in bad preservation, one kneeling and the other reclining, for which there are no corresponding figures on the right.

A remarkable peculiarity of this gable is that the lower part of the figures is in relief, while the torsi rise in the round from the tympanum, which is deeply cut away. It is a tentative intermediary stage between the gable in relief (*e. g.*, Herakles and Hydra on Akropolis) and that with free figures. The proportions are in general heavy, the forms short and thick, the outlines dry and angular, the relief flat and hardly modelled even in the parts in the round; the muscularity is summary and exaggerated, the attitudes constrained. The composition, well conceived in the centre, then becomes disjointed, and the diminution in size of the figures, the further they are from the centre, is quite childish. Still, every one of these defects is to be found, in a modified form, in the frieze, even in the part most advanced in style, and common traits show artists belonging to the same school more or less belated in archaism. There is resemblance in types, costumes, heavy proportions and excessive muscular development. It will easily be seen that this is not an Attic work. Rather is it connected with the archaic sculptures of Asia Minor and the islands, or with those of Southern Italy and Sicily, being derived from an Ionio-insular or a Peloponnesian school.

Only one of the subjects of the frieze can be interpreted with certainty, the Gigantomachy on the *north* side, which is also the best pre-

served and most complete part, being about 8 m. long. On the *east* side the Assembly of the Gods appears to be divided into those for and those against the Trojans, and the combat they are watching is probably that around the body of Patroklos. On the *west* the subject is obscure and the missing parts are many. It would seem that the two goddesses with their chariots stood symmetrically one at each end. One of the two scenes, with the winged Athena returning to Olympos, may represent the apotheosis of Herakles.

There are abundant traces of painting on the backgrounds (blue), the hair (red), the details of the costume (red body color, red-blue borders, designs), the arms (blue-green helmets with red border), chariots, horses, lions (red, blue and green). The colors will soon disappear, but they were noted most minutely immediately after the sculptures were unearthed. Also to be remarked are affixed metal pieces (blades, arrows, *etc.*). The resemblance to the most careful of the black-figured and red-figured vases of the severe style is most striking.

These sculptures are certainly unique. They date between the last years of the sixth and the first years of the V century. Henceforth the history of sculpture cannot be written nor the schools of the VI century studied without this frieze.

The caryatidae already noticed (see JOURNAL, 1894, No. 2, p. 301) are of the same period, and were found on the same site, but though it is possible it is hardly probable that they belong to the same monument.

We will here add to Mr. Homolle's report the judgment of Mr. Gardner in the last issue of the *Journal of Hellenic Studies* (XIV, 1, p. 228): "The subjects of these [friezes] seem to be a group of seated gods, a gigantomachy, and a Homeric battle. They show a vigor and naiveté of detail, a freshness of conception, and a delicacy of execution such as can find no parallel elsewhere, except, as M. Homolle has pointed out, in Attic vases of about 500 B. C. To this period they must be assigned, and to Attic art, as is proved by the similar style of the treasury of the Athenians; in a dedication of the Siphnians this is probable enough. The color, here also, is brilliantly though only partially preserved. The group of seated divinities reminds one of the east frieze of the Parthenon; and although it of course falls short of the dignity and perfection of the Phidian work, it has a grace and charm of its own. And in the gigantomachy there are scenes, one particularly of a goddess in her car drawn by lions who tear a giant that opposes her, which seems almost to anticipate the boldness and originality of Pergamene art. All the decorative details of this building, the carved mouldings, cornices, etc., are cut with a depth

clearness and delicacy that can be matched nowhere, except perhaps in the Erechtheion. It is simply a revelation of what decorative carving can attain to.

A supplementary *chantier* was opened in June–July in the space comprised between houses 138 and 169, outside the sanctuary, which seemed to be free of ruins, and thus suitable as the site for the Museum structure to be erected. Here was found a Græco-Roman tomb, dug in the ground, walled-up, with a staircase, two vaulted chambers of good construction and several sarcophagi. It had long ago been pillaged.

The excavations have brought to light a very complicated series of structures resembling dwelling houses, a large aqueduct, wells and a number of tombs cut in the yellow earth which is easy to work but liable to crumble. There were gathered up, near the aqueduct, a charming bronze statue, much oxydised, in the Doryphoros type, and a beautifully preserved archaic bronze Apollon, 40 cm. high, of excellent style. From the wells came numerous fragments of pottery and bronzes: from the tombs, which were nearly all empty, a red-figured vase of the IV cent., a lot of forty Mycenæan vases, almost all of Furtwängler's form 50. They are glazed, decorated with parallel lines and geometric ornaments; the finest has two octopi superbly drawn, accompanied by geometric ornaments. By their side was a broken sword, a dagger and a fibula of a type represented thus far by but a single specimen.

At the time when the report was being closed there had just been discovered at the temple *chantier* a Roman head in perfect preservation and excellent style, a bronze figurine, and a large marble statue of Antinous, lacking only the arms, of exquisitely refined finicalness of execution and with surface intact.

Work was to be continued up to the winter. M. Homolle is assisted by M. Convert, who has charge of the technical work; by M. Bourguet for epigraphy; by M. Perdrizet for figured monuments, and by M. Tournaire for architectural drawings and notes.—*Bull. Corr. Hell.*, 1894, pp. 175–196; *Chron. des Arts*, 1894, Nos. 28, 29; *Berl. phil. Woch.*, 1894, No. 40; *etc.*

Latest News.—During the excavations of the last few weeks several new statues have been found. One represents a woman, and is of an ancient style of art, but very well preserved. Another in fragments, without head and legs, represents a man of heroic size, and is of the Alexandrine period. It is intended by the Greek government to establish a separate museum at Delphi for the objects discovered there.—*Athenæum*, Sept. 8.

A CHIAN DELEGATE.—In the *Mittheil. Inst. Athen.* (1894, pp. 194–202), A. Nikitsky writes of *Chios in the Delphic Amphiktyony.* He supports the opinion of Theodor Sokoloff, that the word *Chios* in the lists in decrees of the Delphic amphiktyony is not the name of a person, but means *Chian*, showing that Chios sent a delegate.

ELEUSIS.—In the *Mittheil. Arch. Inst.* (1894, pp. 162–193, pl. VII), D. Philios publishes nine *Inscriptions from Eleusis.* No. 1 gives directions for building a foot-bridge of stone across the Ῥειτὸν τὸν παρὰ τοῦ Ἄστεως, the pond nearest Athens on the way to Eleusis. The characters are those in use before Eukleides. Above the inscription is a relief representing Athena shaking hands with a male figure (the Demos of the Eleusinians), Demeter and Kore. No. 2 is a fragment of a letter from some great Roman (possibly Hadrian) to the γένος of the Eumolpidæ. No. 3, in letters of the time after Eukleides, is inscribed on a base once no doubt belonging to a choragic monument. It reads:

Γ]νάθις Τιμο[κλέ]ο[ς Ἀ]ναζανδρίδης Τιμα[γόρο
χορηγοῦντες κῶμωιδοῖς ἐνίκων.
Ἀριστοφάνης ἐ[δ]ίδασκεν.
Ἑτέρανίκη τραγωιδοῖς.
Σοφοκλῆς ἐδίδασκεν.

No. 4 is a part of a decree in honor of Sosikrates, son of Miltiades, of Sphettos. The archon is Philinos, hitherto unknown, the date near the end of the third century B. C. No. 5 is part of a series of builders' contracts. A ditch is to be dug and a foundation wall to be laid in it, upon this columns are to be placed. The archon is Diotimos, 286 B. C. No. 6 contains directions for parts of columns belonging, apparently, to the stoa of Philo. It begins: Θεοί. Εἰς τὸ ἱερὸν Ἐλευσῖνάδε τοῖς σφονδύλοις τῶν κιόνων τοῦ Προστώιου εἰς τοὺς ἁρμοὺς πόλους ποῆσαι καὶ ἐμπόλια χαλκᾶ. Poloi may be pegs and empolia clamps. No. 7 is a fragmentary dedication to Demeter and Kore. It is inscribed on a small column upon which the real offering stood. The inscription reads from right to left, but a few letters are reversed. No. 8 is a small fragment of an account. No. 9 is a new publication with additional fragments of Ἀρχ. Ἐφ., 1888, p. 49=*CIA.* IV, 225.

EPIDAUROS.—SCULPTURES.—In the *Mittheil. Arch. Athen.* (1894, pp. 157–162, pl. VI) F. Winter writes of *The Sculptures of Epidauros.* Timotheos, the chief artist of the sculptures of the temple of Asklepios, was a contemporary of Skopas, and probably the teacher of Leochares, as Skopas was of Bryaxis. The Leda in the Capitoline Museum is compared with a Nereid from Epidauros, and the original is claimed as a work of Timotheos. The Ganymedes of Leochares was probably inspired by the Leda.

INSCRIPTIONS.—In the Ἐφημερὶς Ἀρχαιολογική (1894, pp. 15–24), P. Kavvadias publishes twenty-two *Inscriptions from Epidauros.* These are

all short, consisting for the most part of dedications expressed in the briefest way.

STATUE OF ASKLEPIOS.—In the Ἐφημερὶς Ἀρχαιολογική (1894, pp. 11–14, pl. 1) P. Kavvadias publishes and discusses *Reliefs Representing the Chryselephantine Statue of Asklepios in Epidauros.* One relief is that published, Ἐφ. Ἀρχ. 1885, p. 48, Brunn, *Denkm. d. gr. u. röm. Skulptur*, pl. 3. The other is very like it, though less well preserved. It was found in Epidauros in 1886. The throne is more elaborate, having an arm ending in a sphinx. The god wore a wreath, and his feet are not crossed. In some particulars this relief is more like the statue by Thrasymedes than is the other, in some particulars less like it.

ERETRIA.—HEAD BY EUPHRONIOS.—In the Ἐφημερὶς Ἀρχαιολογική (1894, pp. 121–128, pl. 6), P. Hartwig publishes and discusses a *Head of a Negro with the Inscription* Λέαγρος καλός. The head is a vase from Eretria, the mouth of the vase being added on top of the negro head. The head is made by pressing the clay with the fingers into a mould consisting of two parts. The color is brownish-black, certain parts showing the red of the clay. The inscription is scratched on the lip of the vase. The name Leagros is found on vases of the end of the sixth and beginning of the fifth century, signed by Euphronios and others. It may be that this most lifelike head is the work of Euphronios.

A LEKYTHOS.—In the Ἐφημερὶς Ἀρχαιολογική (1894, pp. 63–68, pl. 2), B. Staes publishes an *Eretrian Lekythos.* The painting on this vase differs from the usual types, which are enumerated. The painting encircles the whole vase. A stele is represented, and beside it a tomb. Before the stele stands a female figure, by the tomb sits a youth with green chlamys lying across his knee. A female figure approaches the stele bearing a tray with taeniae, grapes and a pyxis. Behind the seated youth is uneven ground, and a hare is seated upon an elevation. The colors used are red, brown, green, blue and violet.

EUROPE.

ITALY.

Prehistoric and Classic Antiquities.

ROMAN COINAGE AND EARLY OCCUPATION OF VENETIA.—Sig. Paolo Orsi has, in the *Not. d. Scavi* (1894, pp. 259–69), an interesting study on a find of Roman coins of the III century B. C., at Caltrano. This town occupies a strong position, which, in olden times, must have been of great strategical importance, at the feet of the Alps, guarding the crossing of a river and the communications between the plain of Vicenza and the rich table-land of Asiago. Here some workmen, in

preparing the foundations of a new church tower, came upon a jar of coins of which there must have been over a thousand. About 350 came finally into the hands of the curate of the place, and these were carefully cleaned and studied by Sig. Orsi.

These coins are all Roman Victoriati, of the third century B. C., all of one fundamental type, but varying greatly, not only in signs and symbols, but in size and form of the head of Jove in different compositions of the reverse, different lettering of the exergue, etc. Some of these variants are evident signs of different emissions, while others simply show that different stamps, with but slight variants, were used for the same emission, in order to hasten the work. In so far as their state of preservation is concerned, they may be classified as follows:

1—Almost fresh from the mint,	2	5—Used,	118
2—Very fresh,	7	6—Much used,	110
3—Fresh,	20	7—Worn away,	37
4—Somewhat used,	56		

An examination of the weight of these coins shows that it is not always in proportion to the apparent state of preservation of the coin as the average weight of the classes marked used and much used is greater than that of the fresh and very fresh. This confirms the theory that the apparently poor preservation is due, not so much to the wearing away of individual coins by circulation as to the worn-out condition of the matrix.

In a circle of stones not far from the first find of coins, a dozen coins of Massalia were found near a skeleton. The five examined are hemidrachmas of silver, of ancient forgery, and exceedingly rude style. They belong to the Massaliot system, reduced under the influence of the Roman Victoriati, *i. e.*, after 217 B. C., and they belong apparently to a North Italian manufactory of the close of the III century, whose products are found throughout upper Italy. The Victoriatus was first introduced shortly after the conquest of Illyricum (228 B. C.) in a form suited for use as a fraction of the tridrachma, as it corresponds to $\frac{2}{3}$ of the Roman denarius and $\frac{1}{3}$ of the Illyrian coins. It thus represented a sort of Romano-Illyrian drachma. Its original weight was 3.41 grammes, but this first emission must have been restricted and short-lived. When the denarius was reduced, in 217, the Victoriatus was also reduced to 2.92 gr. and made equal to the Corinthian-Attic drachma: on this base it had a very wide issue, and served as provincial coinage or its prototype. They sometimes bear monograms of *monetarii*, but never complete names of magistrates. Toward the end of the sixth century U. C., the coining of money is entirely concentrated in Rome, and all names of provincial mints disappear

from the Victoriati. No names of monetarii appear before 217, when they are given in monograms or initials; but at the close of the sixth century U. C. the names are spelled in full, and the victoriatus tends to disappear.

Viewed in this light, the Victoriati of Caltriano may be classified as follows:

Examples of issue of 228 or shortly before, weighing over 3.30 gr.,	14
" " " " 217, weighing less than 2.95 gr., . . .	126
" " issues between 228 and 217, weighing between 3.30 and 2.95 gr., ...	210

Further chronological light is cast by a few examples with signs of mint or monetarius; thus:

3 are coined by Matienus, c.	234
2 " " " Metellus, c.	217
8 " " " Cn. Bebius Tempilus, a.	217–214
3 are from the mint of Vibo, ...	218–189

Historical considerations may prove under what circumstances these coins were hidden, during the last years of the third or the first of the second century B. C. In 191 Cisalpine Gaul was entirely occupied by the Romans: the foundation of Aquileia in 183 | 82 signalized the permanent installation of the Romans also in the Venetian province; the conquest of the Histri and Liguri in 178 completes the conquest of Italy. The conquest of the race of mountaineers along the edge of the Venetian plain was, however, another and slower matter, and remains somewhat obscure. Their raids from their Alpine fastnesses into the plains were frequent and dangerous, and were answered by frequent Roman expeditions against their strongholds. It seems, therefore, probable that during the earliest decades of the second century B. C. a Roman expedition into the mountains of Asiago resulted in the destruction by fire of the native village (=Caltrano) then existing at the passage of the river Astagus, and that on the first rumors of the Roman approach this treasure was concealed. The owners never returned, for the position was one which the Romans would need to hold for the protection of the plain.

The prevalence of the victoriatus as a circulating medium among the tribes of the Venetian fore-Alps is proved by finds in the table-lands of Sette Comuni Vicentini, Bostel di Rotzo, Tredici Comuni Veronesi at S. Anna del Faedo.

The tomb, with the Massalian semi-drachmas, precedes but slightly the period of the destruction of the village.

ANCONA.—In Piazza Cavour some ruins and tombs have been brought to light in digging for the foundations of the new palazzo

delle Ferrovie. It is know that a church of S. Silvester existed here which was ruined in 510, and that the monastery of S. John Baptist was built here by the Benedictines in the XI century, and was almost destroyed when it was abandoned in 1464. On the hill just above the present square stood the old ch. of St. Stephen, the primitive cathedral of the city. The tombs and ruins recently found belong to the early Christian and mediæval, and are probably connected with these structures.—*Not. d. Scavi*, 1894, 234–7.

S. ANGELO IN FORMIS.—A TILE WITH AN IMPORTANT GRAFFITO.—Carl Langeister has a note in the *Scavi*, (1894, pp. 284–7) on a remarkable inscription scratched upon a tile now in the Museo Campano in Rome. He reads it: N · D · E · C | *Idibus Iulis finget* | *bipedas* VXXXI | *Actum Casilino* | *Modesto* II *et Probo cos.*

The date is 228 A. D. The *bipeda* is a kind of tile. The inscription therefore says that Celer must make on July 15 5031 bipedal tiles. As a single workman could make only from 137 to 260 tiles per day, this is probably intended as a joke. Prof. Barnabei thinks that it is to be interpreted that Celer had a contract to deliver that number of bricks on July 15. *Actum Casilino* instead of *Casilini* is vulgar usage, and the only other inscription on which this name (Capua) has been found has the same locative form.

This graffito is particularly interesting for the history of cursive writing, as no dated example of this time was hitherto known. Similar *nessi* had been known from the wax tablets of Dacia, written in the time of Marcus Aurelius, but here are ligatures different in many respects. The entire character of the cursive writing is essentially different, and shows the development during the intervening century.

AREZZO.—TERRACOTTA ORNAMENTATION OF A TEMPLE.—Comm. Gamurrini again calls attention in the *Scavi* (1894, pp. 276–7) to the site just outside the ancient Arretium, where the Teatro Petrarca is now being built. He had already noted that here flourished the pottery establishments Annia, Memmia and Rasinia, which came to an end with the fall of the Republic; that here passed a street bordered with trench tombs covered with tiles, and that certain terracotta fragments had come to light which led to the supposition that some small temple had stood on this site.

A number of terracottas decorated in relief, recently given to the Museum, and found here during the work on the theatre, have afforded new material, although as is always the case, no systematic archæological investigation was allowed or was possible.

In 1872 there was found here an acroterium in terracotta, with the head of a man in relief, painted red, and at the same time a small marble cornice and a Corinthian capital. Two years ago the capital

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of a Corinthian marble pilaster came to light, which must have belonged to one of the *antae* of the tempietto. The terracottas that appeared to belong to the structure are so diverse in style as to point either to the existence here of two small temples or to a reconstruction or restoration of one. Among them is a relief showing a Nereid on a marine monster, with traces of white, red and blue coloring. The art is rude and decadent rather than archaic; and the figures are moulded and not modelled. The group was either fixed upon the metope or portion of frieze with nails or was walled in: it thus differs from other Campanian or Latin terracotta metopes. It is to be concluded that this Nereid formed part of a frieze of Nereids bearing the arms of Achilles, a subject represented on vases and sarcophagi. The temple may therefore have been consecrated to Vulcan, the maker of the arms of Achilles, all the more that about it were the terracotta factories with their furnaces, and that the temple of Vulcan is known to have been situated outside the city.

Beside this fragment of the frieze were found an acroterium with the head of a nymph, a piece of ornament with lilies and roses and crowned with isolated palmettos, also fragments of tiles.

IMPORTANT DISCOVERY OF VASES.—The Direction of the Museo Civico of Arezzo has undertaken new researches in the garden of Santa Maria in Gradi, within the city where the beautiful ware of Marcus Perennius was discovered in 1884. Complete success crowned this attempt. Examples were found of the superb ware of Nicephorus, Cerdo, Pylades and Tigranes, as well as fragments representing the products of the last period of Perennian manufacture when Bargas and Cresceno took part in the work.

Certain scenes are most interesting and quite novel; such are the wares decorated with caricatures representing comic scenes. Nothing of the sort had yet been found. Details will be given in another issue.—*Not. d. Scavi*, 1894, p. 93.

BOLOGNA.—PREHISTORIC STELE.—Among fragments handled in the storehouse of the Museum there was recently found a fragment of a stele of the Villanova period, with remains of a human figure and geometric decoration, all incised. The ornamentation consists of a border formed of a double maeander partly interrupted at one point by a rosette. Above this border is a broad space in which it is possible that there were originally a number of figures. Only a part of one remains, a nude man with right arm raised. For the maeander compare the stele of S. Giovanni in Persiceto (JOURNAL, IX, p. 132); for the rosette the Grabinski Arnoaldi and Caprara steles (*ibid*); for the figure, compare the Caprara stele.—BRIZIO in *Not. d. Scavi*, 1894, pp. 270–1.

FIESOLE.—ARCHAIC ETRUSCAN STELE.—Prof. Milani writes in the *Scavi* (1894, p. 116): "I have been able to secure for the Central Etruscan museum at Florence an important monument found some years ago near S. Ansano, in the commune of Fiesole. It is a sepulchral stele, of *macigno*, .40 m. high, .32 m. and .29 m. wide and .10 m. thick, on which are carved in low relief two well-preserved figures of archaic style. A bearded man (perhaps portrait of deceased), with moustache; his body half covered with a mantle, and wearing curved boots. . : his left hand is open and in his right he holds a *kantharos*. In front of him stands a youth in a similar mantle, with nude feet, who holds in his left an oinochoë and acts as cup-bearer. The art and style are of the VI century: cf. *Not. d. Sc.*, 1889, p. 152, 183.

MONTEPULCIANO.—CONTENTS OF A TOMB.—A hall-tomb, which had fallen in, was accidently found and contained a number of interesting objects. Among the bronzes was: (1) a game of Kottabos, having on top the monstrous kneeling winged figure of *Tuchulcha* the Etruscan *Charun*, whose nose is beak-shaped and whose cap is surmounted by two animal's ears and two goat horns; (2) two candelabra, exactly alike, like those of the *Museo Gregoriano*, I, pl. liii, 4, surmounted by a youth holding a horse, upon a channelled shaft, supported on three eagle's claws; (3) two *stamnoi*, with finely chiselled mouth (*Mus. Greg.*, I, pl. iv, 5); (4) another pair of *stamnoi* with handles rising from a palmette; (5) a patera *umbellicata* decorated externally with most delicate leaf-work, while the interior has a rosette in the centre surrounded by dolphins. The other bronzes are less interesting. The bottom of a Kylix is important merely as fixing the date of all the objects at the close of the IV century, B. C.—*Not. d. Scavi*, 1894, pp. 237–41.

PAVIA=TICINUM.—ROMAN BRIDGE.—In consequence of the extreme lowness of the water in the river Ticino, Dr. Taramelli was able during the summer of 1893, to study a pier, the lower part of which remained beneath the present mediæval bridge of Pavia. This pier is all that remains of the Roman bridge, the rest of which was destroyed or used as material at the time of its reconstruction in the Middle Ages. The Roman pier is perfect in form and structure and far superior to the heavier mediæval piers. Dr. Taramelli's belief, confirmed by a section of ancient arch still lying in the water, is that the entire Roman bridge was of stone-work, like those of Rome and Verona, and not partly of wood as was so often the case. He believes that it remained to a late period and that it is referred to as the *pons vetus* in a XII century work (*De laudibus civitatis Papiae*) which is particular in mentioning its stone piers and arches. The present bridge was built in 1351–54, after the old bridge had fallen through, between 1330 and 1351.

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Topography of the ancient city.—Dr. Taramelli notes that the mediæval bridge has exactly the same position and direction as the ancient; that as it lies at the end of what is now the main artery of the city, the Corso Vittorio Emanuele, it is probable that this street follows exactly the line of the main street of the ancient Roman city. Furthermore the plan of the mediæval city, which has hardly been altered, is in general of far greater regularity than is usual, and this leads to the conclusion that it substantially follows the lines of the ancient Roman streets. As a matter of fact the city which the Romans built, fortified and embellished never was involved in the general ruin of Italy. The disasters that befel it from the Goths and in 1004 were but very partial, and the Lombards and Franks as well as the later German emperors favored and enlarged the city. The core of the city, within the innermost of the triple circuit of walls, was always regarded as the most ancient and during the Middle Ages preserved several of its Roman arched gates.—*Not. d. Scavi*, 1894, pp. 73–87.

ROME.—A NEW MUSEUM.—The opening of the halls of the archæological warehouse between the Colosseum and the church of S. Gregorio took place on May 7. Here had been gathered from year to year a considerable mass of objects coming from the excavations. These have now been classified and arranged by the Archæological commission. The building was erected for the purpose between 1884 and 1890. The arrangement is due to Prof. Lanciani, who explained it in his address at the opening ceremonies.

The first hall contains a prœmium to the study of Roman antiquities; that is, the materials of construction and decoration used by the ancients and samples of the various methods of constructing. Here is the richest existing series of stamped bricks and of transmarine marbles; samples of the art of the potter, marble cutter, modeller, mason, smith, wall painter and mosaicist; examples of architectural ornament, doors, windows, baths, cauldrons, heating apparatus, etc.

In the next two halls are the funeral contents of the very ancient tombs of the Esquiline anterior to or contemporary with the walls of Servius Tullius. Its importance for the beginnings of Roman civilization has been shown by Dressel, Pigorini and De Rossi, nor is there any other collection that can compare to it. Here are the two terracotta funeral cases imitated from the trunk of a tree sawed in two and hollowed out, thus going back to the original wooden prototype found on the borders of the lake of Gabii in 1889. Interesting also are sections and contents of the Esquiline wells (*puticoli*) into which were thrown the bodies of slaves and animals; mouths of sepulchral wells; cinerary urns of stone and terracotta; tombs painted after the Etruscan fashion; both hand-made pottery and Etruscan or Italo-Greek vases;

imported Oriental and Egyptian objects especially of glazed ware; objects of the bronze or iron age. In order to demonstrate how true is the tradition of the Alban origin of the founders of Rome, the contents of the early Alban are placed by the side of the early Roman necropolis. The collection is to be increased by the addition of further tombs that lie beneath the soil on Via delle Sette Sale near S. Martino: they will be transported entire.

Hall IV contains inscribed and carved monuments of the Republican period; among which are especially to be noted the series of votive figured terracottas recently found near the aedicula of Minerva Medica, and described on this page. In hall V are the figured marble sculptures, statues, heads, busts, reliefs, among them the well-known altar of Verminus, found in 1876 in Piazza del Macao. The last hall illustrates mainly the Roman aqueducts and contains the richest existing series of inscribed lead pipes, cippi of the Anio Vetus, the Marcia Tepula and Giulia, pipes of the Marcia cut in stone 2200 years ago; fountain genii; fountains of various shapes; a rostrum of the fountain built by Nero on the edge of the pond of his *domus aurea*, found in the Botanical gardens where this museum building is situated; a pump; regulating keys; models of *piscine limarie;* basins of fountains in terracotta, metal and marble, &c.

The entire collection is but what could not find place in the Capitoline museums, of which it is really the surplus and overflow.

VOTIVE OBJECTS OF TEMPLE OF MINERVA.—Near the Via Buonarroti there has been found a large accumulation of fictile objects, mostly coming from the *favissae* of the temple of Minerva Medica, which stood in this part of the Esquiline, where similar votive deposits have been found during late years. Among them are 8 entire statuettes, 43 headless statuettes, 42 fragments do., 90 heads, 11 parts of body, 2 masks, 11 groups of the three seated Eleusinian divinities.

Together with these were many small vases and other parts of funeral deposits, of rude manufacture and of crude black earthenware, evidently from ruined tombs of the archaic Esquiline necropolis.

Among the terracottas are three of unusual interest: a helmeted head of the goddess; a fragment of a lamp with her name scratched in archaic lettering; and a youthful female head, with hair just beginning to grow again in ringlets, probably a votive offering made *restitutione sibi facta capillorum.—Not. d. Scavi*, 1894, p. 278: *Bull. Arch. Com.*, 1894, p. 145.

DRAWINGS OF ROMAN ANTIQUITIES AT ETON.—Prof. Lanciani is publishing a series of papers calling attention to a very important collection of drawings of Roman antiquities now in the library of St. Mary's College at Eton. It was made in Rome during the first thirty years of the

past century, by Dr. Richard Topham, of Windsor. It includes 2936 drawings, distributed in 31 volumes, 18 of which contain 1849 drawings in red and black chalk; 6 contain 383 water-colors and paintings; 7 contain 703 prints. The printed books form the richest and choicest series of those published during the XVI and XVII centuries. As for the drawings, there never was made a more complete collection of figured monuments of Graeco-Roman art, and is the more interesting that it was made before the dispersal of so many collections. The epigraphic collection is of but moderate value.

In the first article Prof. Lanciani treats merely of the drawings of figured antiquities in the museums of Rome (and some in Florence), and he mainly translates Topham's catalogue prefixed to each volume. The drawings in red and black chalk are all exquisitely executed. Among the artists Giov. Domenico Campiglio easily ranks first for grace and delicacy of shading. He became later head of the Calcografia Camerale. Other artists are Giovanni Bigatti, who executed the drawings from Villa Mattei, and Calderi those from Villa Medici. Lanciani calculates that Dr. Topham must have spent about $17,000 for this part of his collection.

In Lanciani's article the drawings are enumerated under museums alphabetically arranged. The series is closed by three miscellaneous volumes marked: (1) statues; (2) bas-reliefs; (3) miscellaneous.

On fol. 74 of the volume of bas-reliefs, there is a drawing of part of a mosaic pavement in the baths of Caracalla. This important and known work is reproduced on pl. IX of the *Bullettino*. A last volume in the form of an album, contains a number of fine drawings of triumphal arches. On fol. 63 and following, is a letter of B. Lodington to Lord Vere Beauclerke, dated from Tripoli of Barbary, June 12, 1726. It speaks of drawings of a triumphal arch (of Cyrene?) which he had ordered done, while the admiral was at Port Mahon, at Minorca. There are three drawings of great importance and the monument is described.

In another article Prof. Lanciani will publish the catalogue of the ancient paintings and mosaics of Rome, drawn and water-colored by Francesco Bartoli, son of Pietro Sante, commissioner of excavations in the time of the Albani pope.—LANCIANI, in *Bull. Com. Arch.*, 1894, pp. 164–87.

THE ATTITUDE OF THE XVI CENTURY TOWARD ANTIQUITIES.—In his address at the opening of the new museum in the Botanical Gardens, on March 7, Prof. Lanciani entered largely into the question of the attitude of the Rome of the XVI century towards the relics of its great past. He has been writing a history of excavations and researches in Rome, to accompany his great Plan of the ancient city, and has had access to

many groups of documents of which he here utilizes a small part. He shows how the communal authorities in the XVI century displayed both enthusiasm and care toward classic antiquities, seeking as far as possible to care for and purchase what was found, prop up imperilled structures, prevent threatened vandalism. Their finances were so straightened as to prevent much good that they would otherwise have been glad to accomplish. They had had to contend with a wholesale movement for the destruction of ancient Rome, in order to use its material in the construction of churches and palaces. Prof. Lanciani recounts some details of the barbarous attempt of Sixtus V to demolish the old structures. Patents were given by wholesale authorizing demolitions. It was only through a popular uprising that the destruction of the tomb of Cecilia Metella was prevented after it had actually commenced. When later, under Clement VIII, S. John Lateran was being modernized, it is interesting to note how the bronze was secured for the decoration of the famous columns of the high altar. The contractor undertakes a journey through Etruria and ransacks its tombs, returning to Rome with many hundred pounds of small artistic bronzes, which, together with portions of the Pantheon beams, were put into the crucible.—*Bull. Arch. Com.*, 1894, pp. 147–57.

MALE STATUE.—Near the side-door of S. Andrea delle Fratte, in Via Capo le Case, a beautiful marble male statue has come to light. It is entirely nude, and lacks head, arms and lower limbs. It is slightly over life size and in its present state measures 1.25 m. in height.—*Not. d. Scavi*, 1894, p. 279.

ROME.—PART OF AN ANCIENT CALENDAR.—In connection with the clearing of certain rooms of an ancient Roman structure of early imperial time on the Via dei Serpenti, a piece of a marble slab was found on which was inscribed a fragment of an early Roman calendar. Parts of two columns remain: on the left are the announcements for Sept. 11–22: on the right those for Oct. 12–20. The lettering is in two sizes, the larger letters reproducing the very ancient *tabulae fastorum*. This calendar contains a number of interesting peculiarities.—*Not. d. Scavi*, 1894, pp. 242–7.

THE CURATORES OPERUM PUBLICORUM.—The *curatores aedium sacrarum et operum locorumque publicorum tuendorum*, which is the complete title of the senators placed in charge of public places under the Empire, were two in number, and were selected at the beginning among those of prætorian and consular rank. At first their office was the same, each having equal supervision over both public buildings and temples, but it would appear that later there was a division of labor and one became the *curator operum publicorum* and the other *curator aedium sacrarum*. This division seems, however, to have been *de facto* and not *de*

jure, as they continued often to work in common under the common title. The division *de jure* had, however, taken place in the time of Diocletian for the *Notitia Dignitatum* states that both were *sub dispositione praefecti urbis;* namely, the *v. c. curator operum maximorum* and the *v. c. curator operum publicanorum*. Of the four *curae* or administrations whose foundation is attributed by Suetonius to Augustus, the *cura viarum* was established in 20 B. C., the *cura aquarum* in 11 B. C., the *cura alvei Tiberis* not later than 6 B. C. Mommsen regards the fourth of these, the *cura operum publicorum*, to be the latest of all. Sig. Cantarelli, however, in his monograph in the Bullettino, regards it as the earliest in date, believing Suetonius to have enumerated them in chronological order. The monograph just mentioned publishes the series of these curators of monuments, and is rendered necessary, in the writer's estimation, by the fact that the list published in 1881 by Klein in the *Rheinisches Museum* not only contains errors, but comes only as far as Diocletian, and contains some lacunæ which have been filled by recent epigraphic discoveries. The following is the list of names given by Cantarelli:

1. *Q. Varius Geminus:* under Augustus. C. IX, 3306. The only curator designated in an inscription with the full title given at the head of this note. He comes at the close of the reign of Augustus.
2. *Torquatus Novellius Atticus:* under Tiberius: from Milan: was proconsul in Gaul under Tiberius and Caligula. C. XIV, 3602.
3. *A. Vitellius:* under Nero: was *curator* between A. D. 60 and 68 before becoming legate and then emperor. Suet. *Vit.* 5.
4. *Cn. Pinarius Cornelius Clemens:* under Nero, at close of reign: Klein, 4.
5. *T. Flavius Sabinus*, nephew of Vespasian, was curator under his uncle. C. VI, 814.
6. *C. Julius Proculus:* under Trajan, after being consul in 104. C. X, 6658.
7. *P. Metilius Secundus Pontianus:* under Hadrian. Was governor of Numidia in 123. C. XI, 3718.
8. *L. Minucius Natalis Quadronius Verus Junior:* under Hadrian. Held this office after consulate and before his governorship of Africa, *i. e.*, 127–130. C. II, 4510.
9. *L. Burbuleius Optatus Ligarianus:* held office after his consulship in 135 and his legation in Cappadocia in 138. C. X, 6006.
10. and 11. Names unknown: under Hadrian. C. VI, 1854 and 858.
12. *Ti.* [*Julius*] *Severus:* under Antoninus Pius. C. I. Gr. 4033.
13. *M. Cutius Priscus, etc.:* under Antoninus Pius. Was consul suffete before taking this office: legate of Dalmatia in 147.

14. *L. Rufus Lollianus Avitus* and *T. Statilius Maximus:* year 146. C. VI, 1008.
15. *P. Salvius Julianus* and *C. Popilius Carus Pedo:* year 150. The former was the compiler of the *edictum perpetuum* and was consul in 148, his colleague Pedo being consul suffete in the same year. C. VI, 855.
16. *Cælius ... illianus Maximus:* year 159.
17. *L. Dasumius Tullius Tuscus:* under Marcus Aurelius. Author of *Senatusconsultus Dasumianus:* consul under Antoninus Pius. C. XI, 3365.
18. *M. Iallius Bassus Fabius Valerianus* and *C. Julius Commodus Orfitianus:* year 161. The former was consul suffete shortly before 161, and together with his family embraced Christianity, a fact of special interest. C. VI, 1119[e].
19. *M. Servilius Fabianus Maximus:* under Marcus Aurelius. *Cf. Bull. Arch. Com.*, 1891, pp. 124–5. Was consul before occupying this office, after which governed Moesia, 161–169. C. VI, 1517.
20. *Maecius Rufus:* year 166. Confused by Klein with the Maecius Rufus who was proconsul of Bythinia in 79. C. VI, 360.
21. *M. Claudius Fronto:* year 167. Distinguished in Parthian War, 166. Consul suffete, 178. C. III, 1457.
22. *Quintus Antistius Adventus Postumius Aquilinus:* year 169. His inscription found in prov. of Constantine, Africa.
23. *T. Aseellius Marcianus:* year 175. C. VI, 3702.
24. *Arsenius Marcellus:* year 181. C. VI, 861.
25. *M. Valerius Bradua Mauricius:* under Commodus. Was consul suffete in 191. C. V, 7783.
26. *Scius Superstes* and *M. Fabius Magnus:* year 193. C. VI, 1585[e].
27. *T. Arrius Bassianus:* year 199. C. VI, 1352.
28. *C. Julius Galerius Asper:* under Septimius Severus. Prætor before and consul after this office. C. XIV, 2505.
29. *P. Catius Sabinus* and *Aelius Romanus:* year 210. Was urban prætor, twice consul, once before and once after this office. *Bull. C.* VIII, 80.
30. *Cæcilius Aris* and *Paulinus:* year 214. *Bull. Arch Com.*, 1884, p. 8.
31. *L. Annius Italicus Honoratus:* under Elagabalus. Cf. *Bull. Arch. Com.*, 1891, p. 118. C. III, 6154.
32. *T. Clodius Pupienus Pulcher Maximus:* under Alexander Severus, son of Emperor Pupienus (?) C. XIV, 3593.
33. *Clodius Pompeianus:* year 244. Kaibel, *Inscr.*, 1045.
34. *L. Aelius Helvius Dionysius:* under Diocletian. Was prefect of Rome in 301: proconsul of Africa in 298. C. VI, 1673.
35. *Valerius Comazon:* year 299. Kaibel, *Inscr.*, 1026.

36. *Q. Flavius Maesius Egnatius Lollianus Mavortius:* under Constantine. Well-known personage under Constantine, Constantine II and Constans.

Beside these, there are a few of uncertain date: (1) *Niger et Corconius;* (2) *L. Pomponius Gratus;* (3) *Aurelius C...;* (4) *Fabius...;* (5) Unknown; (6) *Vibulius (?)*

TERRACINA.—TEMPLE OF JUPITER DISCOVERED.—Immediately above the town of Terracina a bluff rises abruptly, overhanging town and sea, and on a plateau, in part artificial, was a structure whose massive arched substructures have been much studied and admired. They have been generally regarded as part of a palace or praetorium of Theodoric the Goth.

Recent excavations have proved what was believed by more than one archæologist, including myself, that these substructures did not belong to the late period of the Goths, but to the best Roman period, that is, the age of Augustus or earlier. The ground plan of an important temple above these substructures has been laid bare, and there is no doubt that it is the famous temple of Jupiter Anxur. We defer until our next issue a full account of the discoveries with illustrations.—ED.

TIVOLI-TIBUR.—TEMPLE OF HERCULES.—An inscribed cippus has recently been added to the Museo Nazionale of Rome, which appears to have belonged to the famous temple of Hercules at Tibur. It reads: *P(ublius) Fulcinius Vergilius Marcellus, praef(ectus) fabrum, trib(unus) mil(itum) leg(ionis septimae) Gem(inae) Felicis, praef(ectus) equitum alae Parthor(um), subcurator aedium sacrarum et operum locorumque publicor(um), subpraef(ectus) class(is) praet(oriae) Misenensis, curio p(opuli) R(omani) sacris faciundis, Herculi Victori.*

Two holes at the top show that the cippus supported a statuette of Hercules Victor, the protecting divinity of the ancient Tibur, to whom this statuette with its cippus was a votive offering. The giver, P. Fulcinius Vergilius Marcellus, had not had, up to the time of this gift, a particularly brilliant career. His main titles are legionary tribune and prefect of an *ala.*—*Not. d. Scavi,* 1894, pp. 283–4.

VENICE —HISTORY OF A CRETAN INSCRIPTION.—Dr. T. Ricci, who has been making during the past year or more a specialty of Cretan inscriptions, has made an interesting discovery in connection with the famous Cretan inscription in St. Mark's at Venice. Having detached it he found that three of its sides were decorated with a finely-preserved frieze in the style of the XIII century. He found that in reality the slab had been before 1882 in the façade where it must have been placed before 1275. The inscription must, therefore, have been transported to Venice from Constantinople or Krete on the triumphal return of

Doge Dandolo in 1204. This proves that not it but another copy of the treaty between the two cities formed the basis of the well-known Venetian MS. copy of the original—*Not. d. Scavi*, 1894, pp. 232–3.

VERONA.—THE ROMAN THEATRE.—It had always been known that in Roman times Verona possessed not only an amphitheatre but an important theatre, situated at the foot of the *colle di* S. Pietro, and extending thence to the banks of the Adige. Between 1834 and 1840 Cav. Andrea Monga brought to light several important parts of the theatre and attempted to reconstruct it in drawings. Among the objects discovered by him were statues, friezes, inscriptions, fine marbles and coins important for the history of the theatre Nothing, however, was published, and after his death, in 1861, the objects discovered lay neglected in a cellar. Hence it is known but to a few that this theatre at Verona is earlier in date than the amphitheatre, and important for both historical and archæological reasons

At the close of 1893 Sig. S. Ricci, who is becoming well known as a student of Greek epigraphy, obtained financial assistance of the municipality of Verona in order to carry on further investigations and to photograph more important objects found in the area of the theatre since 1757. Tentative trenches were dug between Nov. 29 and Dec. 15 with remarkable success, proving the urgency of systematic and complete excavations for the uncovering of the entire area of the theatre and its grandiose substructures.

Sig. Ricci has obtained the permission to use the inedited notes and drawings of Cav. Monga, and will soon publish a monograph with historic introduction under the auspices of the *R. Deputazione Veneta di Storia Patria.*

The attempts were made in five places, and were only carried far enough to prove the existence of the theatre at different portions of its circuit.

1. Between piazzetta S. Libera and piazzetta del Redentore, in continuation of the scena and E. end of orchestra: excavation showed vertical slabs, and back of them wall which here follows curve of cavea.

2. In cavea, towards river, opposite entrance, three steps were found in place; also six steps of one of the *scalaria* giving access to the *cunei* and *praecinctiones;* also first half step of *cavea.* Then the entire scalarium was uncovered.

3. In the centre of piazzetta di S. Libera the trial excavations proved that the first half step and the three lower rows for the *subsellia* are continuous throughout the semi-circle. Here came to light the opening and part of the course of a fine *euripus* or canal, in splendid preservation, 1.55 m. high by 1.03 m. wide, with stone slabs on top and bottom. Beginning at this east end, the euripus was cleared

for a distance of 16 m. It was ascertained to continue to a further length of 21.15 m., always following the curve of the cavea: at a distance of 37.50 m. it is joined by the section already discovered by Monga toward the Adige. The point of departure discovered in the piazetta di S. Libera is not, however, the ancient opening of the euripus, which extended in a straight light a little further toward the Adige and then continued at right angles to itself in the direction of the piazetta del Redentore, joining the section there already discovered.

4. On the vicolo di S. Libera it was possible to study the substructures of the cavea in tufa blocks, and above them the wall *a calcestruzzo* which sustained the subsella.

5. The most productive trench was the last dug along the west front of the theatre. Here comes to light one of the side walls of the stairway with its outer cornice. It is built of tufa, and the façade is decorated with enormous columns, above which is a broad cornice.

These various trial trenches have given a better knowledge of the substructures, architectural sections and construction, and led to the discovery of very important architectural members.

The objects already referred to as discovered by Monga in his excavations have been transported to the former convent of S. Gerolamo. Among them are to be noted the following pieces: Four busts crowned with laurel and vine that must have belonged to two decorative hermae: apparently of Greek marble and fine workmanship. Two represent the youthful types and two the adult types of Dionysos and a satyr, in evident contrast. There are several portions of the imperial throne: a sphynx and part of another, that may have formed part of the *spalliere*. To the *spalliera* and *bracciale* belong some Greek reliefs of extreme delicacy and beauty, representing the head of a ram and that of a cock. The *spalliera* ends in a charming little satyr. Part of the other half of back and arm is still walled into the Museo Filarmoniro (No. 417). Another fine piece is a torso of great beauty, which has been restored as a caryatid. There are, beside, two colossal marble statues, of which many pieces have been found at different times. One of these is in the type of a satyr, and rests upon its right knee [as in the figure in the theatre of Dronysos at Athens.]

Innumerable fragments of circular ornaments, such as *gorgoneia* in a rayed and decorated circle, have been found. A number of the reliefs found belong to the class of *oscilla*, of which some specimens are preserved in the museum at Naples. Such has been the destruction of the delicate gems of sculpture that but few have been preserved entire, though each fragment is worthy of study and illustration. One of these double scenes has been preserved entire, and a second has been put together again almost completely. The former is, so to

speak, a *pseudopelta*, whose moon-shaped ends represent affronted griffins, as is the case also in Naples. In the field is, on one side, a combat between a gladiator and a tiger, and on the other a sphinx holding with its right paw a body, whose head, with other human remains, appears further on. The second *oscilla* has representations of satyrs allusive to theatrical scenes.

There are also numberless architectural fragments of both Ionic and Corinthian orders; cornices, capitals, columns, plinths, simas, *etc.;* and also a great variety of exquisite Oriental and African marbles that served as revetment to the parts of the theatre that were visible. The above were discovered not only by Cav. Monga, but also, in a differferent locality by Sig. Gian Maria Fontana.

Finally there are fragments of mosaics, terracottas, painted walls, balnear amphorae, terracotta acroteria and autefixes, epigraphic fragments of various periods.—*Not. d.Scavi*, 1894, pp. 223–9.

VISENTIUM-BISENZIO (NEAR CAPODIMONTE).—The new exploration of the Visentian necropolis, referred to in the *Scavi* for 1892, p. 404, was carried on, partly at *la Palazetta*, where the earliest excavations of the ancient Visentium, or Visentia, took place (*Scavi*, 1866, etc.,) and partly in the *contrada Polledrara*, not far from where the third primitive group in this important necropolis was found.

The first sepulchral group or cemetery, with ossuaries of primitive type and cabin-shaped urns, was discovered in 1885, by carrying the excavations below the burials in tufa cases. The second group, also of primitive character, but with tufa cases for inhumation alternating, at the same level, with Italic wells, was formed in the lowest section of the Visentian necropolis, almost at the lake's edge on the piana di S. Bernardino. This cemetery, independent of the first, and bounded by a circle of stones, was accurately and completely explored by Pasqui in November, 1886 (*Scavi*, 1886, pp. 177–205). Therefore, the investigations in December of that year were carried on to the south of S. Bernardino, at *la Polledrara*. Here was found the third cemetery with alternating trench and well tombs, similar to that of S. Bernardino, also carefully described by Pasqui in *Scavi*, 1886, pp. 290–314.

The new investigations of 1892 were carried on about 400 m. from the cemetery of S. Bernardino, on a site called Porto Madonna. Here was found by Sig. Brenciaglia a fourth primitive cemetery, which he noticed in the *Scavi* for 1892, pp. 404 sqq. In April Prof. Milani visited the site, and having had some sample tombs excavated in his presence, found that this cemetery of Porto Madonna corresponded to the others, except that there were no inhumations alternating with the well-tombs, all of which were on the same level and very close together, at a depth of about one metre. The tomb furniture was

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always placed inside tufa recipients, sometimes hemispherical, sometimes almost cylindrical, provided with a cover which is at times rotund, somewhat of the style of the fictile cover of the ritual ossuaries in the shape of a double truncated cone, at times on the type of the helm, at times again, on the type of the roof of the cabin-urns. The steles of the primitive Faliscan necropolis which have more exactly the form of the cabin-roof, and a similar stele found here at Villutium in 1886, prove beyond a peradventure that the ancient Italics intended to give to their necropolis the appearance of a city of the dead, by imitating the cabins, the usual dwelling, not only in the recipients of the mortal remains, but even at times in the object which contained the ritual sepulchral furniture, and at times in the steles which marked, above ground, the tomb of the defunct.

The funerary urns are cabin-shaped. In the example illustrated on p. 125 of the *Scavi*, the cabin-urn has all the details on the roof; the two *capreoli* and the two *cantherii* leaning on the columen: these, as well as the eaves of the roof, are peculiarly channeled in imitation of the wood of which, in the original huts, they were made. Among the contents several types are to be noted: (1) *Kyathos* with striated body and handles; (2) ossuaries and other vases decorated with geometric graffiti, such as maeanders, triangles and squares variously arranged (*e. g.*, in checker-board). Many vases are of the Villanova type. One of a very peculiar type is described where the body is striated and the handle formed of a pair of horses, immediately behind whom is a man who holds them captive by reins or flexible bands that seem to cover their eyes. The style is extremely rude.

Later Contents of Tufa Cases.—The funeral contents of the tufa case-tombs of this necropolis were in part known by the descriptions and illustrations of Pasqui in the *Scavi* for 1886 (p. 177 sqq.), and of Helbig in the *Bull. Inst.*, 1886, p. 19 sqq. The tombs of this character lately opened furnished objects of the same character and dating from about the same period with black-figured Greek vases, to be ascribed rather to the VI than to the V century B. C. Two of these tombs were particularly rich in bronzes; one of these is a Kyathos of remarkably fine style and decoration. Its handle is decorated in relief with two hieratic figures, probably representing priestesses: between them, seated on the crown of the handle, is a thick-set figure, evidently an Etruscan divinity, probably *Thufltha-Turan*. The vase was probably for libations.—MILANI, in *Not. d. Scavi*, 1894, pp. 123–141.

SICILY.—Dr. Orsi, in this year's archæological campaign in the province of Syracuse, in Sicily, has explored three localities, viz., some fresh ground in the necropolis of the "Fusco," a necropolis of the

second Siculan period belonging to the city of Thapsos, and the Christian catacombs of S. Giovanni.

SYRACUSE.—The tombs found at the "Fusco" in very large numbers all belong to the most ancient period of Syracuse; and however subject to dispute may be the chronology of that town, Dr. Orsi attributes them to the end of the eighth or the beginning of the seventh century B. C. They contained many earthenware ossuaries of geometric style, some of which recall the Dipylon type; a number of small *lekythoi* of proto-Corinthian style, both geometric and zoomorphic; as well as some vases ornamented either with geometric designs or animals. Amongst the small objects found as gravegoods, were some *scarabæi* in paste, metal *fibulæ* in bone or amber sheaths, boat-shaped *fibulæ* of bronze, which are rarely found in Greek tombs, and a silver necklace with large pearls of discoidal form. Many of the sepultures had been rifled in barbaric times, when the invaders buried their dead in the necropolis, violating the Greek tombs and placing fresh corpses therein without completely emptying the graves of their contents, save those of intrinsic value. The barbarian remains found in this necropolis seem to belong to the fifth to the seventh century A. D.

THAPSOS.—In the necropolis of Thapsos, in the peninsula of Magnisi, a large quantity of pottery, both Mycenæan and of native Siculan art, has been found. But the most remarkable feature of this cemetery is the architectural decorations of the entrances to the tombs, such as are not found in any necropolis of this period. Some objects, as the pearls in paste and bronze arms, leave us in doubt whether they are of Phœnician origin or of genuine Mycenæan make.—*Athenæum*, Sept 8.

CHRISTIAN ANTIQUITIES.

CONGRESS OF CHRISTIAN ARCHÆOLOGY AT SALONA.—One of the most unique gatherings in these days of cosmopolitanism, of learning and inter-ecclesiastical comity, was the First General Congress of Christian Archæologists recently assembled near Salona, on the Dalmatian coast. At this was assembled leading scholars from all Europe, representing the Roman Catholic, Greek Catholic and Protestant faiths, discussing in the best of harmony the problems and perplexities of Christian archæology and monumental theology. The place of meeting was the historic Spalato, built in and around the ruins and remnants of the magnificent palace to which Diocletian, after his furious but vain efforts to stamp out the Christian religion, retired, and where, in 313, shortly after Constantine and Licinius had, in Milan, issued the proclamation of religious tolerance, he committed suicide. Within these walls it was that Christian scholars from many

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lands and tongues assembled to discuss the historic antiquities of the religion, the builder of this mighty palace, the dimensions of which exceed anything of the kind save the immense royal structures of the Orient, so hated. The neighboring Salona is a rich storehouse of early Christian antiquities, and the energetic director of the Museum, the Roman Catholic archæologist, Mgr. Bulic, inaugurated the movement that resulted in the assembling of this the first convention of Christian archæologists ever held. The other Roman Catholic specialists in this line warmly seconded the project, especially Dr. Neumann, professor of theology in Vienna. The Committee of Preparation consisted of eight Roman Catholic scholars, together with the Greek Catholic Dr. Kondakoff, of St. Petersburg, and Dr. Victor Schultze, of the University of Greifswald, the leading Protestant scholar in this line of research. About one hundred participated in the discussions, in which the use of the Latin language predominated, but in which the Italian, German and Croatian were also largely used. Every leading country of Europe was represented except France and England. There were four representatives from Germany, of whom three were Protestants. Among the leading speakers two were Protestants, namely, Professor Schultze, who spoke on the necessity for establishing museums for Christian archæology, and Professor Bosse, of Kiel, who spoke on photography as an aid for archæological research. Mgr. de Waal presided at the Convention, but the two leading Roman Catholic scholars, namely, de Rossi, of Rome, and Kraus, of Tübingen, could not be present. One of the pleasant features of the Convention was a banquet given by the Bishop of Spalato to thirty members of the Congress from abroad, to which, also, all the Protestants present were invited. The city of Salona also gave an official banquet to the visitors, and entertained all, irrespective of confessional status, in a royal manner. The Convention joined in sending telegrams of congratulations to the Pope and to the German Emperor. The Congress adjourned with the benediction of the Bishop, to meet in second convention in Ravenna.—*N. Y. Independent*, Oct. 18.

The Congress for Christian Archæology at Spalato passed a resolution at its closing plenary session for the publication of a work on the Christian inscriptions in Austro-Hungary and in Bosnia. It also expressed a wish that Christian archæology should be made a matter of instruction in the theological faculties of the universities and in classical seminaries. The next Congress is to be held in 1897 at Ravenna. —*Athenæum*, Sept. 8.

LUCCA.—LOMBARD DOCUMENTS.—G. Simonetti studies in the *Studi Storici* (III, 2), the Lombard diplomas in the archiepiscopal library of Lucca. They had already been published by Muratori (*Ant. Med. æv.* I), Barsocchini (*Mem. e doc. per servire alla Storia di Lucca*), Troya (*Cod. dipl.*

long.), and others. These diplomas date from A. D. 685 to 744 and number 150. They are often of importance for the history of art, as when they relate to the foundation of churches and monasteries.

ROME.—EAGLE-SHAPED GOLD FIBULA.—One of the last pieces of work accomplished by De Rossi was an article on a gold fibula in the form of an eagle which was found in 1888 in a tomb on the Via Flaminia, near the basilica of S. Valentino. This tomb was quite outside the area of the cemetery of the basilica, and evidently was that of a stranger: its structure and its contents were both singular. The tombs of barbarians throughout the north of Europe, especially those of the Franks, belonging to the Merovingian period, contain numerous fibulas in the form of birds, especially eagles. These are apparently the military decorations called *phalerae pectorales* and were in use especially among the Goths. They are in cloisonné work filled in with garnets or enamel. The example found near Rome belonged evidently to one of the warriors of Alaric or of the Ostrogoths that fought against Rome in the Gothic wars of the sixth century.—*Bull. Arch. Com.*, 1894, pp. 158–63.

ROME (NEAR).—SUBTERRANEAN CEMETERY ON MONTE MARIO.—The last number of the *Bullettino di Archeologia Cristiana* comes to me, two months after Comm. De Rossi's death, edited by his old friend and faithful secretary Prof. Gatti. Its publication will not be continued (see p. 551) as it was personal to De Rossi. Its contents, then, are, together with the edition of the *Martyrologium Hieronymianum*, his literary testament, and we will make our summary particularly full.

"A discovery made during recent years has led me to study the subterranean cemetery called of *S. Onofrio in campagna* because it is situated a short distance beyond the modern church of that name on Monte Mario, to the right of the present road, near the old Aurelian and Triumphal roads. . . It does not properly belong to *Roma Sotteranea*, for I have fixed its limits within the zone of three miles from the ancient city walls. The site of this cemetery is somewhat beyond this limit . . . and belongs therefore rather to the suburban villages than to the inhabitants of the metropolis," but its interest is none the less for it is but another proof of the great diffusion of Christianity in the first centuries in the neighborhood of Rome.

Its discovery.—The discovery of this cemetery is said to have taken place in 1674 as we learn from the rare book of Carlo Padre-Dio (*Misure delle sette e nove chiese*, etc.,) published in 1677. Its discoverer, Domenico Ricciardi, wrote a treatise regarding it in 1677 (*Trattato del cemeterio nella via Aurelia*) still in MS., in which he stated the cemetery to be that of S. Lucina, in which were buried the Saints Processus and Martinianus, of apostolic times. In a document of 1669 it is

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called the cemetery of S. Lucina or S. Agatha and the latter name became the favorite one. The date 1669 proves that the cemetery was known somewhat before the alleged discovery of 1674.

It is needless to waste time in showing that this could not be the cemetery of S. Lucina, which is known to be one of the nearest to the city and not the furthest on the via Aurelia. Comm. Enrico Stevenson proposes to see in it the cemetery of SS. Eusebius, Pontianus, Vincentius and Pellegrinus, whose legend asserts them to be buried *in arenario miliario VI inter viam Aureliam et Triumphalem*. The term *arenarium* describes the cemetery, but its position does not correspond, nor is there any monumental evidence to confirm the identification. "I regard it as extremely probable that the cemetery I am describing belonged to the faithful who dwelt in the *montes Vaticani* near the *via Triumphalis*, and that it belongs to the class of those of the country villages of the classic period in the Roman campagna."

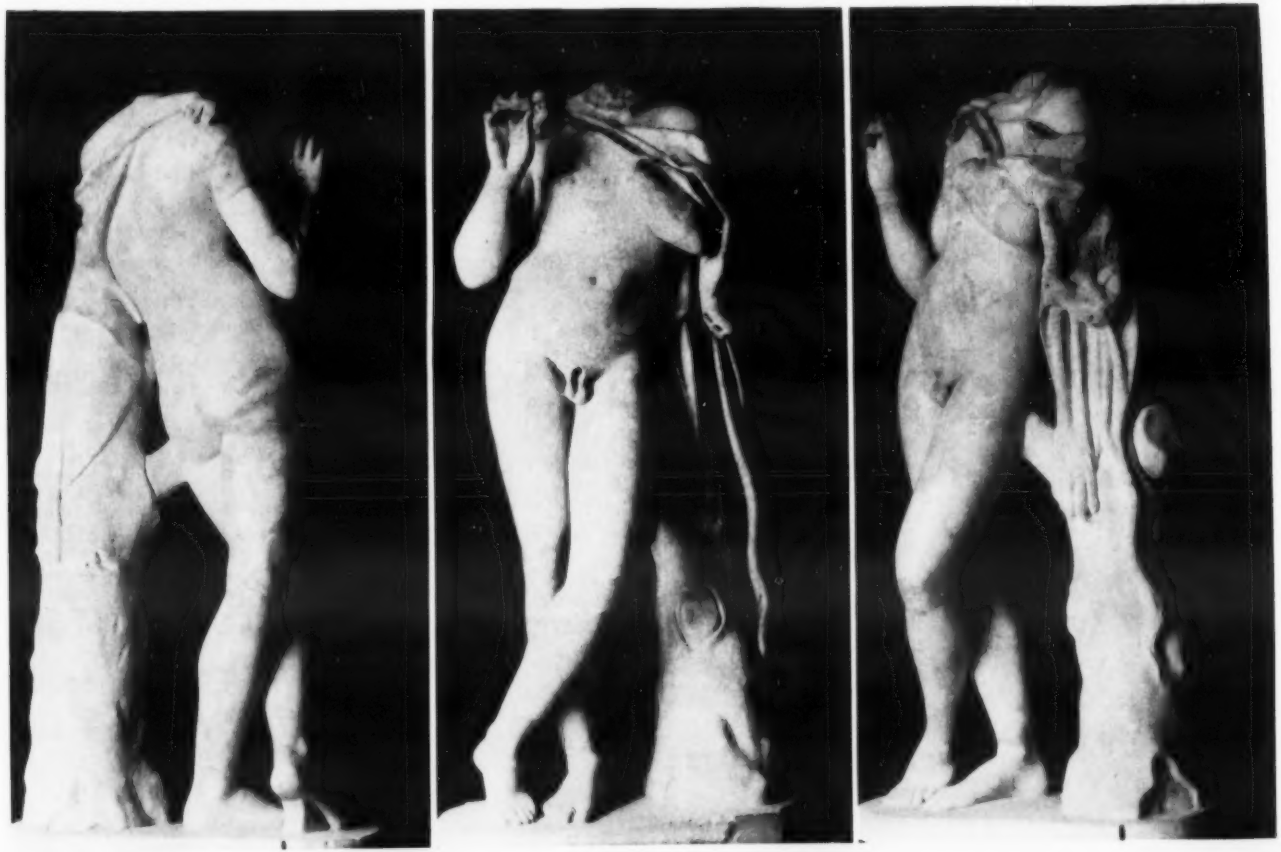
Christian Inscriptions found in the Oratory of S. Croce on Monte Mario. —A notable group of Christian cemeterial inscriptions found, a few years since, in taking to pieces the pavement of the oratory of S. Croce, in the Villa Millini on Monte Mario, appear to have come from this cemetery. This oratory was demolished on account of the defensive fortifications being erected around Rome. It had been built in 1350, restored in 1470, and decorated in 1696. The pavement was found to have been partly made up of cemeterial inscriptions laid face downward. "Armellini, in his *Chiese di Roma*, has published them, but without recomposing the fragments or being able to state from which of the many Roman catacombs they were taken. I shall be able to demonstrate that a number came from the cemeteries of Callixtus, Domitilla, Helena and Pontianus, in consequence of the excavations made there at the close of the XVII century by Fabretti and Boldetti. Perhaps the others, or a part of them, came from the cemetery of Monte Mario, whose exploration was begun about 1670." This group of inscriptions has been transferred to the *lipsanoteca* of the Cardinal Vicar.

The most important of these inscriptions is one that forms part of a funerary poem originally in the catacomb of Callixtus; a modern fac-simile existing in the museum at Urbino. The inscriptions of unknown provenience are all cemeterial, *i. e.*, used as slabs for closing the sepulchral loculi, and are all, with one exception, Christian. One only bears the Constantinean monogram; all the rest have no special sign of the age of the Peace, but are in a style that seems anterior to it. It is natural to suppose that they come, at least in part, from the neighboring cemetery of Monte Mario.

A. L. FROTHINGHAM, JR.

PRINCETON, December 1, 1894.

A SILVER MIRROR-CASE IN THE NATIONAL MUSEUM AT ATHENS.



FAUN FOUND ON THE QUIRINAL, ROME.

LUCULLUS FAUN AT THE VATICAN.